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AUTUMN.

THE dying leaves fall fast,
Chestnut, willow, oak, and beech,
All brown and withered lie.
Now swirling in the cutting blast,
Now sodden under foot — they teach
That one and all must die.

This autumn of the year
Comes sadly home to my poor heart,
Whose youthful hopes are fled.
The darkening days are drear,
Each love once mine I see depart
As withered leaves and dead.

But is it all decay?
All present loss? — no gain remote?
Monotony of pain?
Ah no! I hear a lay
The robin sings — how sweet the note,
A pure unearthly strain.

And, of all flowers the first,
Beneath these leaves in spring shall blow
Sweet violets blue and white.
So all lost loves shall burst,
In springlike beauty, summer glow,
In Heaven upon our sight.
Macmillan's Magazine. M. C. C.

VIXI PUELLIS. (Hor. iii. 26.)

WE loved of yore, in warfare bold
Nor laurelless. Now all must go;
Let this left wall of Venus show
The arms, the tuneless lyre of old.

Here let them hang, the torches cold,
The portal-bursting bar, the bow,
We loved of yore.

But thou, who Cyprus sweet dost hold,
And Memphis free from Thracian snow,
Goddess and queen, with vengeful blow,
Smite, — smite but once that pretty scold
We loved of yore.

Spectator. AUSTIN DOBSON.

AN UNEQUAL GAME.

A MOMENT of loving and laughter,
A jest and a gay good-bye.
If you one short week after
Forget, why may not I?

To you but a moment's feeling,
A touch and a tender tone;
A wound that knows no healing
To me who am left alone.

A wound, and an aching wonder
That lightly you go from me,
That we must be kept asunder
By the cold abiding sea.

Blackwood's Magazine.

AN OCTOBER GARDEN.

IN my autumn garden I was fain
To mourn among my scattered roses:
Alas for that last rosebud which uncloses
To autumn's languid sun and rain,
When all the world is on the wane!
Which has not felt the sweet constraint of
June,
Nor heard the nightingale in tune.

Broad-faced asters by my garden walk,
You are but coarse compared with roses:
More choice, more dear that rosebud which
uncloses
Faint-scented, pinched, upon its stalk,
That least and last which cold winds balk;
A rose it is tho' least and last of all,
A rose to me tho' at the fall.
Athenæum. CHRISTINA G. ROSSETTI.

FONS BANDUSIÆ. (Hor. iii. 13.)

O BABBLING spring! than glass more clear,
Worthy of wine, and wreath not sere,
To-morrow shall a kid be thine
With swelled and sprouting brows for sign,
Sure sign! of loves and battles near.

Child of the race that butt and rear!
Not less, alas! his life-blood dear
Shall tinge thy cold wave crystalline,
O babbling spring!

Thee Sirius knows not. Thou dost cheer
With pleasant cool the plough-worn steer,
The wandering flock. This verse of mine
Shall rank thee one with founts divine;
Men shall thy rock and tree revere,
O babbling spring!

Spectator.

AN AUTUMN SONG.

THE wind is sighing,
The rose is dying,
The swallow is flying
Over the sea;
The leaf is yellow,
The fruit hangs mellow,
The summer's knell, low,
Sounds o'er the lea.

Winter is coming,
East winds are dumbing,
The golden bee's humming,
The reaper's at rest;
Young Love, a rover
'Mong corn and clover,
His wanderings over,
Flies to my breast.
HORACE L. NICHOLSON.

St. James's Magazine.

From The Fortnightly Review.
HUMMING-BIRDS.

THERE are now about ten thousand different kinds of birds known to naturalists, and these are classed in one hundred and thirty families which vary greatly in extent, some containing a single species only, while others comprise many hundreds. The two largest families are those of the warblers, with more than six hundred, and the finches, with more than five hundred species spread over the whole globe; the hawks and the pigeons, also spread over the whole globe, number about three hundred and thirty and three hundred and sixty species respectively; while the diminutive humming-birds, confined to one hemisphere, consist of about four hundred different species. They are thus, as regards the number of distinct kinds collected in a limited area, the most remarkable of all the families of birds. It may, however, very reasonably be asked, whether the four hundred species of humming-birds above alluded to are really all distinct—as distinct on the average as the ten thousand species of birds are from each other. We reply that they certainly are perfectly distinct species which never intermingle; and their differences do not consist in color only, but in peculiarities of form, of structure, and of habits, so that they have to be classed in more than a hundred distinct genera or systematic groups of species, these genera being really as unlike each other as stonechats and nightingales, or as partridges and blackcocks. The figures we have quoted, as showing the proportion of birds in general to humming-birds, thus represent real facts; and they teach us that these small and in some respects insignificant birds constitute an important item in the animal life of the globe.

Humming-birds are, in many respects, unusually interesting and instructive. They are highly peculiar in form, in structure, and in habits, and are quite unrivalled as regards variety and beauty. Though the name is familiar to every one, few but naturalists are acquainted with the many curious facts in their history, or know how much material they afford for admiration and study. I propose, therefore, to give a

brief and popular account of the form, structure, habits, distribution, and affinities of this remarkable family of birds.

The humming-birds form one compact family, named *Trochilida*. They are all small birds, the largest known being about the size of a swallow, while the smallest are minute creatures whose bodies are hardly larger than a humble-bee. Their distinguishing features are, excessively short legs and feet, very long and pointed wings, a long and slender bill, and a long extensible tubular tongue; and these characters are found combined in no other birds. The feet are exceedingly small and delicate, often beautifully tufted with down, and so short as to be hardly visible beyond the plumage. The toes are placed as in most birds, three in front and one behind, and have very strong and sharply curved claws; and the feet serve probably to cling to their perch rather than to support the weight of the body. The wings are long and narrow, but strongly formed, and the first quill is the longest, a peculiarity found in hardly any other birds but a few of the swifts. The bill varies greatly in length, but is always long, slender, and pointed, the upper mandible being the widest and lapping over the lower at each side, thus affording complete protection to the delicate tongue, the perfect action of which is essential to the bird's existence. The humming-bird's tongue is very long, and is capable of being greatly extended beyond the beak and rapidly drawn back, by means of muscles which are attached to the hyoid or tongue bones and bend round over the back and top of the head to the very forehead, just as in the woodpeckers. The two blades or laminae, of which the tongues of birds usually seem to be formed, are here greatly lengthened, broadened out, and each rolled up; so as to form a complete double tube connected down the middle, and with the outer edges in contact but not united. The extremities of the tubes are, however, flat and fibrous. This tubular and retractile tongue enables the bird to suck up honey from the nectaries of flowers and also to capture small insects, but whether the latter pass down the tubes or are entangled in the fibrous tips and thus drawn

back into the gullet is not known. The only other birds with a similar tubular tongue are the sun-birds of the East, which, however, as we shall presently explain, have no affinity whatever with the humming-birds.

The colors of these small birds are exceedingly varied and exquisitely beautiful. The basis of the coloring may be said to be green, as in parrots; but, whereas in the latter it is a silky green, in humming-birds it is always metallic. The majority of the species have some green about them, especially on the back; but in a considerable number rich blues, purples, and various shades of red are the prevailing tints. The greater part of the plumage has more or less of a metallic gloss, but there is almost always some part which has an intense lustre as if actually formed of scales of burnished metal. A gorget covering the greater part of the neck and breast most commonly displays this vivid color, but it also frequently occurs on the head, on the back, on the tail-coverts above or below, on the upper surface of the tail, on the shoulders or even the quills. The hue of every precious stone and the lustre of every metal is here represented; and such terms as topaz, amethyst, beryl, emerald, garnet, ruby, sapphire, golden, golden-green, coppery, fiery, glowing, iridescent, refulgent, celestial, glittering, shining, are constantly used to name or describe the different species. No less remarkable than the colors are the varied developments of plumage with which these birds are adorned. The head is often crested in a variety of ways; either a simple flat crest, or with radiating feathers, or diverging into two horns, or spreading laterally like wings, or erect and bushy, or recurved and pointed like that of a plover. The throat and breast are usually adorned with broad, scale-like feathers, or these diverge into a tippet, or send out pointed collars, or elegant frills of long and narrow plumes tipped with metallic spots of various colors. But the tail is even a more varied and beautiful ornament, either short and rounded, but pure white or some other strongly contrasted tint, or with short pointed feathers forming a star, or with the three

outer feathers on each side long and tapering to a point; or larger, and either square or round, or deeply forked, or acutely pointed; or with two middle feathers excessively long and narrow; or with the tail very long and deeply forked, with broad and richly-colored feathers; or with the two outer feathers wire-like and having broad spoon-shaped tips. All these ornaments, whether of the head, neck, breast, or tail, are invariably colored in some effective or brilliant manner, and often contrast strikingly with the rest of the plumage. Again, these colors often vary in tint according to the direction in which they are seen. In some species they must be looked at from above, in others from below, in some from the front, in others from behind, in order to catch the full glow of the metallic lustre. Hence when the birds are seen in their native haunts, the colors come and go and change with their motions, so as to produce a startling and beautiful effect.

It is a well-known fact that, when male birds possess any unusual ornaments, they take such positions or perform such evolutions as to exhibit them to the best advantage while endeavoring to attract or charm the females or in rivalry with other males. It is therefore probable that the wonderfully varied decorations of humming-birds, whether burnished breast-shields, resplendent tail, crested head, or glittering back, are thus exhibited; but almost the only actual observation of this kind is that of Mr. Belt, who describes how two males of the *Florisuga mellivora* displayed their ornaments before a female bird. One would shoot up like a rocket, then suddenly expanding the snow-white tail like an inverted parachute, slowly descend in front of her, turning round gradually to show off both back and front. The expanded white tail covered more space than all the rest of the bird, and was evidently the grand feature of the performance. Whilst one was descending, the other would shoot up and come slowly down expanded.*

The bill differs greatly in length and shape, being either straight or gently

* The Naturalist in Nicaragua, p. 112.

curved, in some species bent like a sickle, in others turned up like the bill of the avoet. It is usually long and slender, but in one group is so enormously developed that it is nearly the same length as the rest of the bird. The legs, usually little seen, are in some groups adorned with globular tufts of white, brown, or black down, a peculiarity possessed by no other birds. The reader will now be in a position to understand how the four hundred species of humming-birds may be easily distinguished, by the varied combinations of the characters here briefly enumerated, together with many others of less importance. One group of birds will have a short round tail, with crest and long neck-frill; another group a deeply-forked broad tail, combined with glowing crown and gorget; one is both bearded and crested; others have a luminous back and pendent neck-plumes; and in each of these groups the species will vary in combinations of color, in size, and in the proportions of the ornamental plumes, so as to produce an unmistakable distinctness; while, without any new developments of form or structure, there is room for the discovery of hundreds more of distinct kinds of humming-birds.

The name we usually give to the birds of this family is derived from the sound of their rapidly-moving wings, a sound which is produced by the largest as well as by the smallest member of the family. The Creoles of Guiana similarly call them *bourdons* or hummers. The French term, *oiseau-mouche*, refers to their small size; while *colibri* is a native name which has come down from the Carib inhabitants of the West Indies. The Spaniards and Portuguese call them by more poetical names, such as flower-peckers, flower-kissers, myrtle-suckers,—while the Mexican and Peruvian names showed a still higher appreciation of their beauties, their meaning being rays of the sun, tresses of the day-star, and other such appellations. Even our modern naturalists, while studying the structure and noting the peculiarities of these living gems, have been so struck by their inimitable beauties that they have endeavored to invent appropriate English names for the more beautiful and re-

markable genera. Hence we find in common use such terms as sun-gems, sun-stars, hill-stars, wood-stars, sun-angels, star-throats, comets, coquettes, flame-bearers, sylphs, and fairies; together with many others derived from the character of the tail or the crests.

The Motions and Habits of Humming-birds.—Let us now consider briefly the peculiarities of flight, the motions, the food, the nests, and general habits of the humming-birds, quoting the descriptions of those modern naturalists who have personally observed them. Their appearance, remarks Professor Alfred Newton, is entirely unlike that of any other bird. "One is admiring some brilliant and beautiful flower, when between the blossom and one's eye suddenly appears a small dark object, suspended as it were between four short black threads meeting each other in a cross. For an instant it shows in front of the flower; again another instant, and emitting a momentary flash of emerald and sapphire light, it is vanishing, lessening in the distance, as it shoots away, to a speck that the eye cannot take note of." Audubon observes that the ruby humming-birds pass through the air in long undulations, but the smallness of their size precludes the possibility of following them with the eye farther than fifty or sixty yards, without great difficulty. A person standing in a garden by the side of a common *althæa* in bloom, will hear the humming of their wings and see the little birds themselves within a few feet of him one moment, while the next they will be out of sight and hearing. Mr. Gould, who visited North America in order to see living humming-birds while preparing his great work on the family, remarks that the action of the wings reminded him of a piece of machinery acted upon by a powerful spring. When poised before a flower, the motion is so rapid that a hazy semicircle of indistinctness on each side of the bird is all that is perceptible. Although many short intermissions of rest are taken, the bird may be said to live in the air—an element in which it performs every kind of evolution with the utmost ease, frequently rising perpendicularly, flying backward, pirouetting or dancing off,

as it were, from place to place, or from one part of a tree to another, sometimes descending, at others ascending. It often mounts up above the towering trees, and then shoots off like a little meteor at a right angle. At other times it gently buzzes away among the little flowers near the ground; at one moment it is poised over a diminutive weed, at the next it is seen at a distance of forty yards, whither it has vanished with the quickness of thought.

The rufous flame-bearer, an exquisite species found on the west coast of North America, is thus described by Mr. Nuttall: "When engaged in collecting its accustomed sweets, in all the energy of life, it seemed like a breathing gem, a magic carbuncle of flaming fire, stretching out its glorious ruff as if to emulate the sun itself in splendor." The Sappho comet, whose long forked tail barred with crimson and black renders it one of the most imposing of humming-birds, is abundant in many parts of the Andes; and Mr. Bonelli tells us that the difficulty of shooting them is very great, from the extraordinary turns and evolutions they make when on the wing; at one instant darting headlong into a flower, at the next describing a circle in the air with such rapidity that the eye, unable to follow the movement, loses sight of the bird until it again returns to the flower which at first attracted its attention. Of the little vervain humming-bird of Jamaica, Mr. Gosse writes: "I have sometimes watched with much delight the evolutions of this little species at the moringa tree.* When only one is present, he pursues the round of the blossoms soberly enough. But if two are at the tree, one will fly off, and suspend himself in the air a few yards distant; the other presently starts off to him, and then, without touching each other, they mount upwards with strong rushing wings, perhaps for five hundred feet. They then separate, and each starts diagonally towards the ground like a ball from a rifle, and wheeling round comes up to the blossoms again as if it had not moved away at all. The figure of the smaller humming-birds on the wing, their rapidity, their wavering course, and their whole manner of flight are entirely those of an insect." Mr. Bates remarks that on the Amazons during the cooler hours of the morning and from four to six in the afternoon humming-

birds are to be seen whirring about the trees by scores; their motions being unlike those of any other birds. They dart to and fro so swiftly that the eye can scarcely follow them, and when they stop before a flower it is only for a few moments. They poise themselves in an unsteady manner, their wings moving with inconceivable rapidity, probe the flower, and then shoot off to another part of the tree. They do not proceed in that methodical manner which bees follow, taking the flowers seriatim, but skip about from one part of the tree to another in the most capricious way. Mr. Belt remarks on the excessive rapidity of the flight of the humming-bird giving it a sense of security from danger, so that it will approach a person nearer than any other bird, often hovering within two or three yards (or even one or two feet) of one's face. He watched them bathing in a small pool in the forest, hovering over the water, turning from side to side by quick jerks of the tail, now showing a throat of gleaming emerald, now shoulders of glistening amethyst, then darting beneath the water, and rising instantly, throw off a shower of spray from its quivering wings, and again fly up to an overhanging bough and commence to preen its feathers. All humming-birds bathe on the wing, and generally take three or four dips, hovering between times about three or four inches above the surface. Mr. Belt also remarks on the immense numbers of humming-birds in the forests, and the great difficulty of seeing them; and his conclusion is, that in the part of Nicaragua where he was living they equalled in number all the rest of the birds together, if they did not greatly exceed them.

The extreme pugnacity of humming-birds has been noticed by all observers. Mr. Gosse describes two meeting and chasing each other through the labyrinths of twigs and flowers, till, an opportunity occurring, the one would dart with seeming fury upon the other, and then, with a loud rustling of their wings, they would twirl together, round and round, till they nearly came to the earth. Then they parted, and after a time another tussle took place. Two of the same species can hardly meet without an encounter, while in many cases distinct species attack each other with equal fury. Mr. Salvin describes the splendid *Eugenes fulgens* attacking two other species with as much ferocity as its own fellows. One will knock another off its perch, and the two will go fighting and screaming away at a pace hardly to be followed by the eye. Audubon says they

* Sometimes called the horse-radish tree. It is the *Moringa pterygosperma*, a native of the East Indies, but commonly cultivated in Jamaica. It has yellow flowers.

attack any other birds that approach them, and think nothing of assaulting tyrant-shrikes and even birds of prey that come too near to their home.

The food of humming-birds has been a matter of much controversy. All the early writers down to Buffon believed that they lived solely on the nectar of flowers; but since that time every close observer of their habits maintains that they feed largely, and in some cases, wholly, on insects. Azara observed them on the La Plata in winter, taking insects out of the webs of spiders at a time and place where there were no flowers. Bullock, in Mexico, declares that he saw them catch small butterflies, and that he found many kinds of insects in their stomachs. Waterton made a similar statement. Hundreds and perhaps thousands of specimens have since been dissected by collecting naturalists, and in almost every instance their stomachs have been found full of insects, sometimes, but not generally, mixed with a proportion of honey. Many of them in fact may be seen catching gnats and other small insects just like fly-catchers, sitting on a dead twig over water, darting off for a time in the air, and then returning to the twig. Others come out just at dusk, and remain on the wing, now stationary, now darting about with the greatest rapidity, imitating in a limited space the evolutions of the goatsuckers, and evidently for the same end and purpose. Mr. Gosse also remarks: "All the humming-birds have more or less the habit, when in flight, of pausing in the air and throwing the body and tail into rapid and odd contortions. This is most observable in the *Polytmus*, from the effect that such motions have on the long feathers of the tail. That the object of these quick turns is the capture of insects, I am sure, having watched one thus engaged pretty close to me. I observed it carefully, and distinctly saw the minute flies in the air which it pursued and caught, and heard repeatedly the snapping of the beak. My presence scarcely disturbed it, if at all."

There is also an extensive group of small brown humming-birds, forming the sub-family *Phaethornithinae*, which rarely or never visit flowers, but frequent the shady recesses of the forest, where they hunt for minute insects. They dart about among the foliage, and visit in rapid succession every leaf upon a branch, balancing themselves vertically in the air, passing their beaks closely over the under surface of each leaf, and thus capturing, no doubt, any small insects that may lurk

there. While doing this, the two long feathers of the tail have a vibrating motion, serving apparently as a rudder to assist them in performing the delicate operation. Others search up and down stems and dead sticks in the same manner, every now and then picking off something, exactly as a bush-shrike or a tree-creeper does, with the difference that the humming-bird is constantly on the wing; while the remarkable sickle-bill is said to probe the scale-covered stems of palms and tree-ferns to obtain its insect food. It has also been often stated that, although humming-birds are very bold and easily tamed, they cannot be preserved long in captivity, even in their own country, when fed only on syrup. Audubon states that when thus fed they only live a month or two and die apparently starved; while if kept in a room whose open windows are covered with a fine net, so as to allow small insects to enter, they have been kept for a whole year without any ill effects. Another writer, Mr. Webber, captured and tamed a number of the ruby-throat in the United States. He found that when fed for three weeks on syrup they drooped, but after being let free for a day or two they would return to the open cage for more of the syrup. Some which had been thus tamed and set free, returned the following year, and at once flew straight to the remembered little cup of sweets. Mr. Gosse in Jamaica also kept some in captivity, and found the necessity of giving them insect food; and he remarks that they were fond of a small ant that swarmed on the syrup with which they were fed. It is strange that, with all this previous experience and information, those who have attempted to bring live humming-birds to this country have fed them exclusively on syrup; and the weakness produced by this insufficient food has no doubt been the chief cause of their death on, or very soon after, arrival. A box of ants would not be difficult to bring as food for them, but even finely-chopped meat or yolk of egg would probably serve, in the absence of insects, to supply the necessary proportion of animal food.

The nests of the humming-birds are, as might be expected, beautiful objects, some being no larger inside than the half of a walnut-shell. These small cup-shaped nests are often placed in the fork of a branch, and the outside is sometimes beautifully decorated with pieces of lichen, the body of the nest being formed of cottony substances and the inside lined with the finest and most silky fibres. Others suspend

their nests to creepers hanging over water, or even over the sea; and the Pichincha humming-bird once attached its nest to a straw rope hanging from the roof of a shed. Others again build nests of a hammock form attached to the face of rocks by spider's web: while the little forest-haunting species fasten their nests to the points or to the under sides of palm-leaves or other suitable foliage. They lay only one or two white eggs.

Geographical Distribution and Variation.—Most persons know that humming-birds are found only in America; but it is not so generally known that they are almost exclusively tropical birds, and that the few species that are found in the temperate (northern and southern) parts of the continent are migrants, which retire in the winter to the warmer lands near or within the tropics. In the extreme north of America two species are regular summer visitants, one on the east and the other on the west of the Rocky Mountains. On the east the common North American or ruby-throated humming-bird extends through the United States and Canada, and as far as 57° north latitude, or considerably north of Lake Winnipeg; while the milder climate of the west coast allows the rufous flame-bearer to extend its range to beyond Sitka to the parallel of 61°. Here they spend the whole summer, and breed, being found on the Columbia River in the latter end of April, but retire to Mexico in the winter. Supposing that those which go furthest north do not return further south than the borders of the tropics, these little birds must make a journey of full three thousand miles each spring and autumn. The Antarctic humming-bird visits the inhospitable shores of Tierra del Fuego, where it has been seen visiting the flowers of fuchsias in a snow-storm, while it spends the winter in the warmer parts of Chili and Bolivia. In the southern parts of California and the central United States three or four other species are found in summer; but it is only when we enter the tropics that the number of different kinds becomes considerable. In Mexico there are more than thirty species, while in the southern parts of Central America there are more than double that number. As we go on towards the equator they become still more numerous, till they reach their maximum in the equatorial Andes. They especially abound in the mountainous regions; while the luxuriant forest plains of the Amazons, in which so many other forms of life reach their maximum, are very poor in humming-

birds. Brazil, being more hilly and with more variety of vegetation, is richer, but does not equal the Andean valleys, plateaux, and volcanic peaks. Each separate district of the Andes has its peculiar species and often its peculiar genera, and many of the great volcanic mountains possess kinds which are confined to them. Thus, on the great mountain of Pichincha there is a peculiar species found at an elevation of about fourteen thousand feet only; while an allied species on Chimborazo ranges from fourteen thousand feet to the limits of perpetual snow at sixteen thousand feet elevation. It frequents a beautiful yellow-flowered alpine shrub belonging to the *Asteraceæ*. On the extinct volcano of Chiriqui in Veragua a minute humming-bird, called the little flame-bearer, has been only found inside the crater. Its scaled gorget is of such a flaming crimson that, as Mr. Gould remarks, it seems to have caught the last spark from the volcano before it was extinguished.

Not only are humming-birds found over the whole extent of America, from Sitka to Tierra del Fuego, and from the level of the sea to the snow-line on the Andes, but they inhabit many of the islands at a great distance from the mainland. The West Indian islands possess fifteen distinct species belonging to eight different genera, and these are so unlike any found on the continent that five of these genera are peculiar to the Antilles. Even the Bahamas, so close to Florida, possess two peculiar species. The small group of islands called Tres Marias, about sixty miles from the west coast of Mexico, has a peculiar species. More remarkable are the two humming-birds of Juan Fernandez, situated in the Pacific Ocean four hundred miles west of Valparaiso in Chili, one of these being peculiar; while another species inhabits the little island Mas-a-fuera, ninety miles further west. The Galapagos, though very little further from the mainland and much more extensive, have no humming-birds, neither have the Falkland Islands; and the reason seems to be that both these groups are deficient in forest, and in fact have hardly any trees or large shrubs, while there is a great paucity of flowers and of insect life.

The three species which inhabit Juan Fernandez and Mas-a-fuera present certain peculiarities of great interest. They form a distinct genus, *Eustephanus*, one species of which inhabits Chili as well as the island of Juan Fernandez. This, which may be termed the Chilian species, is greenish in both sexes, whereas in the two

species peculiar to the islands the males are red or reddish-brown, and the females green. The two red males differ very slightly from each other, but the three green females differ considerably; and the curious point is, that the female in the smaller and more distant island somewhat resembles the same sex in Chili, while the female of the Juan Fernandez species is very distinct, although the males of the two islands are so much alike. As this forms a comparatively simple case of the action of the laws of variation and natural selection, it will be instructive to see if we can picture to ourselves the process by which the changes have been brought about. We must first go back to an unknown but rather remote period, just before any humming-birds had reached these islands. At that time a species of this peculiar genus, *Eustephanus*, must have inhabited Chili; but we must not be sure that it was identically the same as that which is now found there, because we know that species are always undergoing change to a greater or less degree. After perhaps many failures, one or more pairs of the Chilean bird got blown across to Juan Fernandez, and finding the country favorable, with plenty of forests and a fair abundance of flowers and insects, they rapidly increased and permanently established themselves on the island. They soon began to change color, however, the male getting a tinge of reddish-brown, which gradually deepened into the fine color now exhibited by the two insular species, while the female, more slowly, changed to white on the under surface and on the tail, while the breast-spots became more brilliant. When the change of color was completed in the male, but only partially so in the female, a further emigration westward took place to the small island Mas-a-fuera, where they also established themselves. Here, however, the change begun in the larger island appears to have been checked, for the female remains to this day intermediate between the Juan Fernandez and the Chilean forms. More recently, the parent form has again migrated from Chili to Juan Fernandez, where it still lives side by side with its greatly changed descendant.* Let us now see how far these facts are in accordance with the general laws of varia-

tion, and with those other laws which I have endeavored to show regulate the development of color.* The amount of variation which is likely to occur in a species will be greatly influenced by two factors—the occurrence of a change in the physical conditions, and the average abundance or scarcity of the individuals composing the species. When from these or other causes variation occurs, it may become fixed as a variety or a race, or may go on increasing to a certain extent, either from a tendency to vary along certain special lines induced by local or physiological causes, or by the continued survival and propagation of all such varieties as are beneficial to the race. After a certain time a balance will be arrived at, either by the limits of useful variation in this one direction having been reached, or by the species becoming harmoniously adapted to all the surrounding conditions; and without some change in these conditions the specific form may then remain unaltered for a very long time, whence arises the common impression of the fixity of species. Now in a country like Chili, forming part of a great continent very well stocked with all forms of organic life, the majority of the species would be in a state of stable equilibrium, the most favorable variations would have been long ago selected, and the numbers of individuals in each species would be tolerably constant, being limited by the numerous other forms whose food and habits were similar, or which in any way impinged upon its sphere of existence. We may, therefore, assume that the Chilean humming-bird which migrated to Juan Fernandez was a stable form, hardly if at all different from the existing species which is termed *Eustephanus galeritus*. On the island it met with very changed but highly favorable conditions. An abundant shrubby vegetation and a tolerably rich flora; less extremes of climate than on the mainland; and, most important of all, absolute freedom from the competition of rival species. The flowers and their insect inhabitants were all its own; there were no snakes or mammalia to plunder its nests; nothing to prevent the full enjoyment of existence. The consequence would be, rapid increase and a large permanent population, which still maintains itself; for Mr. Moseley, of the "Challenger" expedition, has informed the writer that humming-birds are extraordinarily abundant in Juan Fernandez, every bush or tree having

* In the preceding account of the probable course of events in peopling these islands with humming-birds, I follow Mr. Scater's paper on the Land-birds of Juan Fernandez, — *Ibis*, 1871, p. 183. In what follows, I give my own explanation of the probable causes of the change.

* See *Macmillan's Magazine*, Sept., 1877, "On the Colors of Animals and Plants."

one or two darting about it. Here, then, we have one of the special conditions which have always been held to favor variation — a great increase in the number of individuals; but, as there was no struggle with allied creatures, there was no need for any modification in form or structure, and we accordingly find that the only important variations which have become permanent are those of size and of color. The increased size would naturally arise from greater abundance of food with a more equable climate throughout the year, the healthier, stronger, and larger individuals being preserved. The change of color would depend on molecular changes in the plumage accompanying the increase of size; and the superior energy and vitality in the male, aided by the favorable change in conditions and rapid increase of population, would lead to an increased intensity of color, the special tint being determined either by local conditions or by inherited tendencies in the race. It is to be noted that the change from green to red is in the direction of the less refrangible rays of the spectrum, and is in accordance with the law of change which has been shown to accompany expansion in inorganic, and growth and development in organic, forms.* The change of color in the female, not being urged on by such intense vital activity as in the case of the male, would be much slower, and, owing probably to inherited tendencies, in a different direction. The under surface of the Chilean bird is ashy with bronzy-green spots on the breast, while the tail is entirely bronze-green. In the Juan Fernandez species the under surface has become pure white, the breast-spots larger and of a purer golden-green, while the whole inner web of the tail-feathers has become pure white, producing a most elegant effect when the tail is expanded.

We may now follow the two sexes to the remoter island, at a period when the male had acquired his permanent style of coloring, but was not quite so large as he subsequently became; while the change of the female bird had not been half completed. In this small and comparatively barren island (a mere rock, as it is described by some authors) there would be no such constant abundance of food, and therefore no possibility of a large permanent population; while the climate would not differ materially from that of the larger island; variation would therefore be

checked, or might be stopped altogether; and we find the facts exactly correspond to this view. The male, which had already acquired his color, remains almost undistinguishable; but he is a little smaller than his immediate ancestral form, indicating either that the full size of that form had not been acquired at the period of migration, or that a slight diminution of size has since occurred owing to a deficiency of food. The female shows also a slight diminution of size, but in other respects is almost exactly intermediate between the Chilean and Juan Fernandez females. The color beneath is light ashy, the breast-spots are intermediate in size and color, and the tail-feathers have a large ill-defined white spot on the end of the inner web, which has only to be extended along the whole web to produce the exact character which has been acquired in Juan Fernandez. It has probably remained since its migration nearly or quite stationary, while its Juan Fernandez relative has gone on steadily changing in the direction already begun; and the more distant species geographically thus appears to be more nearly related to its Chilean ancestor.

Coming down to a more recent period, we find that the comparatively small and dull-colored Chilean bird has again migrated to Juan Fernandez, but it at once came into competition with its red descendant, which had firm possession of the soil and had probably undergone slight constitutional changes exactly fitting it to its insular abode. The new comer, accordingly, only just manages to maintain its footing; for we are told by Mr. Reed, of Santiago, that it is by no means common; whereas, as we have seen, the red species is excessively abundant. We may further suspect that the Chilean birds now pass over pretty frequently to Juan Fernandez, and thus keep up the stock; for it must be remembered that whereas, at a first migration, both a male and a female are necessary for colonization, yet, after a colony is formed, any stray bird which may come over adds to the numbers, and checks permanent variation by cross-breeding.

We find, then, that all the chief peculiarities of the three allied species of humming-birds which inhabit the Juan Fernandez group of islands, may be fairly traced to the action of those general laws which Mr. Darwin and others have shown to determine the variations of animals and the perpetuation of those variations. It is also instructive to note that the greater variations of color and size have been accompanied by several lesser variations

* See "Colors of Animals;" *Macmillan's Magazine*, Sept., 1877, pp. 394-398.

in other characters. In the Juan Fernandez bird the bill has become a little shorter, the tail-feathers somewhat broader, and the fiery cap on the head somewhat smaller; all these peculiarities being less developed or absent in the birds inhabiting Masafuera. These may be due, either to what Mr. Darwin has termed correlation of growth, or to the partial reappearance of ancestral characters under more favorable conditions, or to the direct action of changes of climate and of food; but they show us how varied and unaccountable are the changes in specific forms that may be effected in a comparatively short time, and through very slight changes of locality.

If now we consider the enormously varied conditions presented by the whole continent of America—the hot, moist, and uniform forest-plains of the Amazon; the open llanos of the Orinoco; the dry uplands of Brazil; the sheltered valleys and forest slopes of the eastern Andes; the verdant plateaus, the barren paramos, the countless volcanic cones with their peculiar alpine vegetation; the contrasts of the east and west coasts; the isolation of the West Indian islands, and to a less extent of Central America and Mexico, which we know have been several times separated from South America; and when we further consider that all these characteristically distinct areas have been subject to cosmical and local changes, to elevations and depressions, to diminution and increase of size, to greater extremes and greater uniformity of temperature, to increase or decrease of rainfall, and that with these changes there have been coincident changes of vegetation and of animal life, all affecting in countless ways the growth and development, the forms and colors, of these wonderful little birds—if we consider all these varied and complex influences, we shall be less surprised at their strange forms, their infinite variety, their wondrous beauty. For how many ages the causes above enumerated may have acted upon them we cannot say; but their extreme isolation from all other birds, no less than the abundance and variety of their generic and specific forms, clearly point to a very high antiquity.

The Relations and Affinities of Humming-birds.—The subject of the position of this family in the class of birds and its affinities or resemblances to other groups, is so interesting, and affords such good opportunities for explaining some of the best-established principles of classification in natural history in a popular way, that

we propose to discuss it at some length, but without entering into technical details.

There is in the eastern hemisphere, especially in tropical Africa and Asia, a family of small birds called sun-birds, which are adorned with brilliant metallic colors, and which, in shape and general appearance, much resemble humming-birds. They frequent flowers in the same way, feeding on honey and insects; and all the older naturalists placed the two families side by side as undoubtedly allied. In the year 1850, in a general catalogue of birds, Prince Lucien Bonaparte, a learned ornithologist, placed the humming-birds next to the swifts, and far removed from the *Nectarinide* or sun-birds; and this view of their position has gained ground with increasing knowledge, till now all the more advanced ornithologists have adopted it. Before proceeding to point out the reasons for this change of view, it will be well to discuss a few of the general principles which guide naturalists in the solution of such problems.

It is now generally admitted that, for the purpose of determining obscure and doubtful affinities, we must examine by preference those parts of an animal which have little or no direct influence on its habits and general economy. The value of an organ, or of any detail of structure, for purposes of classification, is generally in inverse proportion to its adaptability to special uses. And the reason of this is apparent when we consider that similarities of food and habits are often accompanied by similarities of external form or of special organs, in totally distinct animals. Porpoises, for example, are modified externally so as to resemble fishes, yet they are really mammalia. Some marsupials are carnivorous, and are so like true carnivora that it is only by minute peculiarities of structure that the skeleton of the one can be distinguished from that of the other. Many of the hornbills and toucans have the same general form, and resemble each other in habits, in food, and in their enormous bills; yet peculiarities in the structure of the feet, in the form of the breast-bone, in the cranium, and in the texture and arrangement of the plumage, show that they have no real affinity, the former approaching the kingfishers, the latter the cuckoos. These last-mentioned peculiarities have no direct relation to habits, and they are therefore little liable to change, when from any cause a portion of the group may have been driven to adopt a new mode of life. Thus all the Old World apes, however much they may

differ in size or habits, and whether we class them as baboons, monkeys, or gorillas, have the same number of teeth; while the American monkeys all have an additional premolar tooth. This difference can have no relation to the habits of the two groups, because each group exhibits differences of habits greater than often occur between American and Asiatic species; and it thus becomes a valuable character, indicating the radical distinctness of the two groups, distinctness confirmed by other anatomical peculiarities.

On the other hand, details of organization which seem specially adapted to certain modes of life, are often diminished or altogether lost in a few species of the group, showing their essential unimportance to the type as well as their small value for classification. Thus, the woodpeckers are most strikingly characterized by a very long and highly extensible tongue, with the muscles attached to the tongue-bone prolonged backward over the head so as to enable the tongue to be suddenly darted out, and also by the rigid and pointed tail, which is a great help in climbing up the vertical trunks of trees. But in one group (the *Picumnus*), the tail becomes quite soft, while the tongue remains fully developed; and in another (*Meiglyptes*) the characteristic tail remains, while the prolonged hyoid muscles have almost entirely disappeared, and the tongue has consequently lost its peculiar extensile power. Yet in both these cases the form of the breast-bone and the character of the feet, the skeleton, and the plumage, show that the birds are really woodpeckers, while even the habits and the food are very little altered. In like manner the bill may undergo great changes, as from the short crow-like bill of the true birds-of-paradise to the long slender bills of the *Epimachina* which latter were on that account long classed apart in the tribe of *Tenuirostres*, or slender-billed birds, but whose entire structure shows them to be closely allied to the paradise-birds. So, the long feathery tongue of the toucans differs from that of every other bird, yet it is not held to overbalance the weight of anatomical peculiarities which show that these birds are allied to the barbets and the cuckoos.

The skeleton, therefore, and especially the sternum or breast-bone, affords us an almost infallible guide in doubtful cases, because it appears to change its form with extreme slowness, and thus indicates deeper-seated affinities than those shown by organs which are in direct connection

with the outside world, and are readily modified in accordance with varying conditions of existence. Another, though less valuable guide, is afforded, in the case of birds, by the eggs. These often have a characteristic form and color, and a peculiar texture of surface, running unchanged through whole genera and families which are nearly related to each other, however much they may differ in outward form and habits. Another detail of structure which has no direct connection with habits and economy is the manner in which the plumage is arranged on the body. The feathers of birds are by no means set uniformly over their skin, but grow in certain definite lines and patches, which vary considerably in shape and size in the more important orders and tribes, while the mode of arrangement agrees in all which are known to be closely related to each other; and thus the form of the feather-tracts, or the "pterylography" as it is termed, of a bird is a valuable aid in doubtful cases of affinity.

Now, if we apply these three tests to the humming-birds, we find them all pointing in the same direction. The sternum or breast-bone is not notched behind; and this agrees with the swifts, and not with the sun-birds, whose sternum has two deep notches behind, as in all the families of the vast order of *Passeres*, to which the latter belong. The eggs of both swifts and humming-birds are white, only two in number, and resembling each other in texture. And in the arrangement of the feather-tracts the humming-birds approach more nearly to the swifts than they do to any other birds; and altogether differ from the sun-birds, which, in this respect as in so many others, resemble the honey-suckers of Australia and other true passerine birds.

Having this clue to their affinities, we shall find other peculiarities common to these two groups, the swifts and the humming-birds. They have both ten tail-feathers, while the sun-birds have twelve. They have both only sixteen true quill-feathers, and they are the only birds which have so small a number. The humming-birds are remarkable for having, in almost all the species, the first quill the longest of all, the only other birds resembling them in this respect being a few species of swifts; and lastly, in both groups the plumage is remarkably compact and closely pressed to the body. Yet with all these points of agreement, we find an extreme diversity in the bills and tongues of the two groups. The

swifts have a short, broad, flat bill, with a flat, horny-tipped tongue of the usual character; while the humming-birds have a very long, narrow, almost cylindrical bill, containing a tubular and highly extensible tongue. The essential point however is, that whereas hardly any of the other characters we have adduced are adaptive, or strictly correlated with habits and economy, this character is pre-eminently so; for the swifts are pure aerial insect-hunters, and their short, broad bills, and wide gape, are essential to their mode of life. The humming-birds, on the other hand, are floral insect-hunters, and for this purpose their peculiarly long bills and extensible tongues are especially adapted; while they are at the same time honey-suckers, and for this purpose have acquired the tubular tongue. The formation of such a tubular tongue out of one of the ordinary kind is easily conceivable, as it only requires to be lengthened, and the two laminae of which it is composed curled in at the sides; and these changes it probably goes through in the young birds. When on the Amazon I once had a nest brought me containing two little unfledged humming-birds, apparently not long hatched. Their beaks were not at all like those of their parents, but short, triangular, and broad at the base, just the form of the beak of a swallow or swift slightly lengthened. Thinking (erroneously) that the young birds were fed by their parents on honey, I tried to feed them with a syrup made of honey and water, but though they kept their mouths constantly open as if ravenously hungry, they would not swallow the liquid, but threw it out again and sometimes nearly choked themselves in the effort. At length I caught some minute flies, and on dropping one of these into the open mouth it instantly closed, the fly was gulped down, and the mouth opened again for more; and each took in this way fifteen or twenty little flies in succession before it was satisfied. They lived thus three or four days, but required more constant care than I could give them. These little birds were in the "swift" stage; they were pure insect-eaters, with a bill and mouth adapted for insect-eating only. At that time I was not aware of the importance of the observation of the tongue, but as the bill was so short and the tubular tongue not required, there can be little doubt that the organ was, at that early stage of growth, short and flat, as it is in the birds most nearly allied to them.

In respect of all the essential and deep-

seated points of structure, which have been shown to offer such remarkable similarities between the swifts and the humming-birds, the sun-birds of the eastern hemisphere differ totally from the latter, while they agree with the passerine birds generally, or more particularly with the creepers and honey-suckers. They have a deeply-notched sternum; they have twelve tail-feathers in place of ten; they have nineteen quills in place of sixteen; and the first quill, instead of being the longest, is the very shortest of all; while the wings are short and round, instead of being excessively long and pointed. Their plumage is arranged differently; and their feet are long and strong, instead of being excessively short and weak. There remain only the superficial characters of small size and brilliant metallic colors to assimilate them with the humming-birds, and one structural feature—a tubular and somewhat extensible tongue. This however is a strictly adaptive character, the sun-birds feeding on small insects and the nectar of flowers, just as do the humming-birds; and it is a remarkable instance of a highly peculiar modification of an organ occurring independently in two widely separated groups. In the sun-birds the hyoid or tongue muscles do not extend so completely over the head as they do in the humming-birds, so that the tongue is less extensible; but it is constructed in exactly the same way by the inrolling of the two laminae of which it is composed. The tubular tongue of the sun-birds is a special adaptive modification acquired within the family itself, and not inherited from a remote ancestral form. This is shown by the amount of variation this organ exhibits in different members of what is undoubtedly one family. It is most highly developed in the *Arachnothereæ*, or spider-hunters of Asia, which are sun-birds without any metallic or other brilliant coloring. These have the longest bills and tongues, and the most developed hyoid muscles; they hunt much about the blossoms of palm-trees, and may frequently be seen probing the flowers while fluttering clumsily in the air, just as if they had seen and attempted to imitate the aerial gambols of the American humming-birds. The true metallic sun-birds generally cling about the flowers with their strong feet; and they feed chiefly on minute hard insects, as do many humming-birds. There is, however, one species (*Chalcoparia phanictotis*) always classed as a sun-bird, which differs entirely from the rest of the species in having the tongue flat, horny, and forked

at the tip; and its food seems to differ correspondingly, for small caterpillars were found in its stomach. More remotely allied, but yet belonging to the same family, are the little flower-peckers of the genus *Diceum*, which have a short bill and a tongue twice split at the end; and these feed on small fruits, and perhaps on buds and on the pollen of flowers. The little white-eyes (*Zosterops*), which are probably allied to the last, eat soft fruits and minute insects. We have here a whole group of birds considerably varied in external form, yet undoubtedly closely allied to each other, one division of which is specially adapted to feed on the juices secreted by flowers and the minute insects that harbor in them; and these alone have a lengthened bill and double tubular tongue, just as in the hummingbirds. We can hardly have a more striking example of the necessity of discriminating between adaptive and purely structural characters. The same adaptive character may coexist in two groups which have a similar mode of life, without indicating any affinity between them, because it may have been acquired by each independently to enable it to fill a similar place in nature. In such cases it is found to be an almost isolated character, connecting apparently two groups which otherwise differ radically. Non-adaptive, or purely structural characters, on the other hand, are such as have, probably, been transmitted from a remote ancestor, and thus indicate fundamental peculiarities of growth and development. The changes of structure rendered necessary by modifications of the habits or instincts of the different species have been made, to a great extent, independently of such characters, and as several of these may always be found in the same animal, their value becomes cumulative. We thus arrive at the seeming paradox, that the *less* of direct use is apparent in any peculiarity of structure, the *greater* is its value in indicating true, though perhaps remote, affinities; while any peculiarity of an organ which seems essential to its possessor's well-being is often of very little value in indicating affinity for other creatures.

This somewhat technical discussion will, it is hoped, enable the general reader to understand some of the more important principles of the modern or natural classification of animals, as distinguished from the artificial system which long prevailed. It will also afford him an easily remembered example of those principles, in the radical distinctness of two families of

birds often confounded together, — the sun-birds of the eastern hemisphere and the humming-birds of America; and in the interesting fact that the latter are essentially swifts — profoundly modified, it is true, for an aerial and flower-haunting existence, but still bearing in many important peculiarities of structure the unmistakable evidences of a common origin.

ALFRED R. WALLACE.

ERICA.*

TRANSLATED FOR THE LIVING AGE FROM THE GERMAN OF

FRAU VON INGERSLEBEN.

XL.

THE ABDUCTION.

THE next day brought equally bright sunlight, and the guests at the watering-place all went out on the sea. The princess' yawl appeared garlanded with flowers and adorned with tiny flags, and the lovely woman felt so much flattered by the attention she attracted, that she even bestowed a patronizing smile on Caroline Sternau, who, with her family, had joined the party.

Erica had only seen the gay throng from a distance. Seated on the steps of her veranda, she watched for the return of the little flotilla. The distance was too great for her to be able to distinguish individuals, but she knew that the first boat contained the princess, Elmar, and Caroline, and endeavored to make her imagination complete the picture. Absorbed in her fancies, she remained on the steps for some time longer. Evening was closing in, the bright colors in the western sky were fading, and one star after another appeared. Erica knew that the princess had accepted an invitation to spend the evening with a neighboring family, and therefore paid no attention to Christine, who called her as she carried the lamp into the little parlor, whose glass doors opened upon the veranda.

At last she saw a large party come up the street in the twilight. The figure of the princess, in a gleaming white cloak, was clearly visible, and to her surprise she perceived little Carlos beside his mother. True, she knew that the latter rarely left the boy, but the hour seemed somewhat late for the little fellow. In spite of her efforts, she could not distinguish the persons who followed, but she heard Caroline's

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musical laugh, and recognized the deep voice of Herr von Wehlen, who seemed absorbed in an animated conversation.

When the party had ascended the hill to the neighboring house — whose lighted windows gleamed brightly in the darkness — she at last rose and went in. Christine had already set the table, and Erica, who always made tea for her mother, approached it to perform her duties. The invalid was lying in an armchair with half-closed eyes, in a sort of lethargy, a condition that frequently overpowered her, and which she was no longer able to shake off as before by her strength of will. She therefore took no notice of Erica's restless manner, and indeed could scarcely hold the cup her daughter handed to her.

After the meal was over, the latter, as usual, took a book to read aloud to her mother for an hour. Her mind was not fixed upon what she was reading, and it therefore not only lacked expression, but often distinctness. The listener, who usually criticised everything very subtly, and considered the hour devoted to reading aloud more as a lesson than a time of recreation, seemed, however, perfectly satisfied, for she made no remark, and Erica went on and on, occasionally glancing at the clock to see whether the appointed time had expired.

At last Christine entered the room. She made a pretext of some errand, and then with the familiarity of an old servant, instantly commenced a conversation.

"Nobody would believe what kind of doings are going on in Waldbad. Every day there is some new amusement, and to-day, when they have all been out on the sea for hours, they might surely spend the evening quietly at home. But no, our neighbor — who would be much better employed if he kept his children's rabbits in order — is giving a great party to-night. All the rooms are crowded with people, who are laughing and making such a noise that one can hear it in our garden through the open windows, and they're playing on the piano and dancing besides. Our well is half empty, for of course everybody wants some water to drink, and none will do except ours. What is to come of it, I'm sure I don't know."

Her mistress, who slowly rose from her chair, put a stop to Christine's eloquence. "I am tired and will go to bed," said the invalid in a low tone. "You would probably like to go out this beautiful evening, Erica, and convince yourself of the truth of Christine's story, so you will be glad to shorten the hour for reading. Good night,

my child," and the bowed figure, leaning on the old servant's arm, tottered out of the room.

Erica scarcely found herself alone, ere she pushed open the glass doors and went out on the veranda. A soft breeze was blowing, that gently fanned her cheeks and seemed to lure her forward. At first she found herself surrounded by impenetrable darkness, which appeared all the deeper when contrasted with the bright glow that streamed from the little windows of the drawing-room upon a narrow space in the immediate vicinity of the house. But when she had left this circle of light and entered the gloom, the dark outlines of the bushes, the houses, and all solid substances gradually became relieved against the lighter atmosphere, and she could clearly distinguish her surroundings.

The sky had outspread its majestic mantle of stars, thousands upon thousands sparkled and twinkled above her. Near the horizon, amid the multitude of lesser heavenly lamps, a single star shone forth brightly and majestically, as if it were ruler and the others only vassals. But the illusion could last only a short time, for its changeful light contrasted strangely with the eternal repose of the glimmering little points, and marked it as the fire that blazed in the lighthouse at Swinemünd, as a guiding star to the distant mariners.

Proximity alone gave the little shining spot, in the eyes of short-sighted mortals, its superiority to all the radiant lamps of heaven. Worlds, whose grandeur the human mind can scarcely realize, receded into the background before the tiny, insignificant light kindled by human hands. What pride, and yet what deep humility, should be inspired by the sight! the boundlessness of the intellect and the narrow limits of the senses placed in such direct contrast with each other.

Erica's eyes rested on the bright shining star; its radiant, changeful light was dear and familiar to her. Ever since her childhood it had shone every night, often alone, and she had fancied she could not go to sleep without casting a last glance at it. But this evening her eyes soon wandered dreamily away and roved over the dark surface of the sea, whose low murmur sounded like a gentle lullaby. A soft breeze swept gently over the waves, caressed her hair, and sighed itself into silence amid the branches of the neighboring forest.

A spicy odor of rosin exhaled from the pines; even the bushes, grass, and ferns around sent forth a faint perfume, which

blended with the pure, soft air, and produced a most invigorating atmosphere, as if all nature were intoxicated by the magic of the night. The leaves rustled softly, as though exchanging loving words, and a low, mysterious murmur ran through the boughs as if they were telling each other the most wondrous tales. The faint twitter of a sleepy bird sometimes echoed through the woods, and the monotonous chirping of the cricket blended with the low rustling of the tree-tops, the distant murmur of the waves, into a solemn, divine, and yet sometimes sweet earthly harmony.

The enchanting beauty of the night so completely engrossed the thoughts and senses of the young girl, that she scarcely thought of the real object of her walk. She listened to the soft yet distinct melodies that echoed around her, and in so doing forgot the louder sounds she had come to hear. When, however, she advanced a little farther, memory was again aroused, for the lighted windows of the next house gleamed brightly through the darkness as if they wished to wage a victorious battle against the gloom. Here also the loud confusion of voices that echoed from the dwelling drowned the sweet, eloquent silence of the night.

The discord thus created was so great that Erica felt inclined to turn back, but lingered a moment longer and glanced in at the open windows. The distance was still too great, or her keen eyes were not sufficiently eager, for she recognized no one, and perceiving groups of people promenading near the house she turned and went back to her former solitude. Evidently the guests were not all incapable of feeling the magic that pervaded the outside world, and had left the noisy rooms to enjoy the delightful evening.

Erica now wandered up and down the enclosure she called her garden, and at last sat down on the turf near the yew hedge. From this spot she could neither see the lighted windows, nor hear the murmur of voices, she was once more alone. The melancholy chirp of the cricket sounded close beside her, and the soft breeze sighed through the boughs over her head. She turned towards the sea and eagerly inhaled the delicious freshness borne from its surface by the light wind, but started in terror, for the mischievous zephyr brought at the same time the unmistakable odor of an excellent cigar.

If she had previously felt the light and noise in the next house as a discord, the artificial odor might well appear in striking

contrast with the perfumed breath of nature. The dreamy reveries disappeared as if by magic, and she was thrown into such a tumult of agitation that her heart beat stormily.

One of the company had entered her garden, that was certain; but it appeared less evident whether the intruder had encroached upon a stranger's grounds by design or accident, though the latter was scarcely credible, since a low fence enclosed the patch of land. Had the lighted windows attracted him, and he merely wished to satisfy his curiosity, or did he know that this was her home?

Erica paused; she was becoming too bold in her conclusions. Yet amid the numerous doubts that assailed her mind, she felt no uncertainty in regard to one thing and indeed the most important, namely that the possessor of the cigar was no other than Elmar. True, she could give no reason for this assurance, but she did not even think of asking for one.

Meantime the light breeze, like a mischievous kobold, brought the pungent odor of the cigar nearer and nearer. At last the young girl rose and glided slowly away into the shadow of the dark bushes, that she might not be seen by the smoker. When, on reaching her hiding-place, she again looked around, she saw his retreating figure moving over the grass, and suddenly heard Christine's shrill voice pierce the silence of the night.

Erica was so startled by this unexpected annoyance that at first she did not even understand what Christine was screaming so loudly, but Elmar's laugh and musical voice were all the more distinct as he replied.

"My good woman, I'm not meditating any attack on your well. Is water so precious in Waldbad that you are obliged to watch and defend the pump?"

"You talk according to what you know about it, sir," replied Christine, not very politely. "If you have been in Waldbad even a few days, you ought to know that our well has the best water in the whole place."

"Are you Frau von Hohenstadt's servant?"

"Of course I am, I——"

"You see I have heard of the well, though I did not know exactly where it was. I shall ask you for a glass of water from it soon. Good-night," and Elmar walked towards the lighted windows of the next house.

Erica would gladly have hurried forward to check Christine's incivility, but

she could not make up her mind to leave her hiding-place. Meantime Elmar had disappeared in the gloom, and she now saw Christine enter the house. She was again alone, but unfortunately her mind was no longer in harmony with the solitude, and she prepared to go in, but instantly paused again for she distinctly perceived a figure moving near the house. So Elmar had not left the garden, had perhaps merely waited till Christine entered. This conclusion seemed to be confirmed by the conduct of the wanderer, for he approached so near the house that he was plainly visible in the lamplight, boldly gazing into the open windows, and then walked back so near her hiding-place, that she feared she should be discovered.

Crouching almost to the ground, in order to remain concealed under the shadow of the bushes, Erica glided nearer the forest and remained standing beside the light fence that enclosed the garden. Her keen ear caught the sound of footsteps echoing along the path through the woods. She stood under the shadow of a little group of pines, perfectly secure from discovery, straining her eyes to distinguish the advancing figure.

The steps approached quickly, but with a smothered sound, as if the pedestrian wished to make as little noise as possible. Not far from the spot where Erica stood, the path descended the hill and led close by the garden fence. She could therefore distinctly perceive that the approaching figure carried some dark object. Just as the man passed her, she thought she heard a cry issue from the large cloth that was fastened over the bundle. It sounded like the low wailing of a child, and she now distinctly heard a faint moan.

She recognized the voice, and the knowledge flashed upon her mind like lightning. Herr von Wehlen's secret suddenly appeared like a solved enigma. He had come to steal little Carlos, and was just carrying him away from the lighted house.

"Carlos!" she cried, "Carlos! is it you, do you hear me?"

The man started violently at the loud exclamation which sounded so suddenly close beside him, muttered a half-smothered curse between his teeth, and then hurried along the path with redoubled speed, while a louder wail came from the bundle.

"Help!" Erica screamed through the darkness. "Help! help!"

But her voice died away unheard, the north wind had risen, and the loud rustling of the trees drowned her words.

What should she do? If she pursued the fugitive alone, it would probably result only in her own destruction without securing little Carlos's freedom. If she ran across the long distance that separated her from the next house, the robber would obtain a start which would render any pursuit impossible. Stop! another expedient now occurred to her.

She darted back to her house like an arrow from the bow. Elmar could not be far away, with his help the little fellow might be rescued. In spite of her headlong speed, his name echoed clearly and loudly through the night, and she soon heard his reply. With trembling limbs she flew in the direction of the sound, saw his figure, hurried towards him, and, grasping his hand, drew him resistlessly forward.

"Come—we have not a moment—they are stealing little Carlos. He will be carried off on that ship, I know it! Hurry, hurry, or we shall not save him."

Although Elmar did not understand the affair, and could scarcely comprehend the incoherent words, he perceived that some extraordinary event was taking place. The darkness, together with his ignorance of the locality, made him utterly helpless without the aid of his companion, so he held her hand firmly in his own, allowed her to guide him, and promised any assistance she desired.

They soon found themselves in the same path along which the man had just passed with his burden. Erica darted over the ground with perfect ease, she knew every obstacle, and understood how to render it harmless to her companion. In broken sentences—for the speed with which they were running did not permit any other mode of speech—but with perfect calmness, she now explained the object of her pursuit. Elmar did not understand the cause of the abduction, but Erica's positive assurances convinced him of the truth of her statement, and he exerted all his strength to reach the desired goal as quickly as possible.

They now heard rapid footsteps on the path before them.

"There he is!" cried Erica.

But the words had scarcely died away, when a bright flash blazed close before them, and at the same moment a loud report echoed through the silent forest.

"Are you hurt, Erica?" asked Elmar anxiously.

"Not at all. How can he see to aim in this darkness?"

"Stay here, I can follow alone now," and the young man tried to release his hand from his companion's.

But she clung to him anxiously. "Come, come. The robber has gained another start."

A second flash gleamed through the darkness, and again a loud report roused the echoes of the forest. Once more Elmar tried to release himself, and again Erica prevented the attempt, and now the path ran through a glade where the fugitive's figure was distinctly visible. But the forms of the pursuers also appeared, and the robber turned, paused, raised his hand, took aim, and the bullet whizzed by and entered the trunk of a neighboring tree.

"Let us keep back a little," murmured Erica, "we will go round the glade, I have a path, perhaps it will succeed."

"Guide me wherever you please," whispered Elmar, "I am only a tool in your hands."

Both retreated into the shadow, while the fugitive darted swiftly across the glade. The path now turned aside towards the beach, and when he plunged into the forest again he found his pursuers close at his heels. Again he fired his revolver into the darkness, without avail, as he supposed from the hasty whispers exchanged behind him.

"Let us give him a little start again," said Erica softly, "in this way he will soon fire all his shots harmlessly into the darkness, and I hope will get no time to load again."

The fresh sea-breeze blew into their faces, and the grey dusk that brooded over the sea seemed almost light in contrast with the gloom of the forest. The robber must have had the same feeling, for he looked back towards his pursuers as if he now hoped to be able to take a sure aim.

"Let us show ourselves a moment, and then vanish in the darkness."

The moment was enough to bring another bullet, which splintered the branch of a tree.

"He still has quite a long distance to go before he reaches the boat," whispered Erica, "it is that little black speck on the beach. Stay under the shade of the trees. You can make your way undisturbed in a straight line to the edge of the forest. I must leave you now; a woodcutter's hut is close by, I will call him to our assistance."

She waited for no reply, but drew her hand away, and darted off through the

trees amid the dense gloom. Elmar had no time to think of her design, for he was obliged to exert himself to the utmost to find his way and keep in sight of the fugitive. Both had advanced a long distance, when Erica's hand was suddenly put into Elmar's and her voice whispered,—

"The woodcutter had gone to bed, but he will come soon. Here is an axe for a weapon."

He thanked her by a pressure of the hand, took the axe, and weighed it in his grasp.

"It is high time, Erica. See, yonder black spot is quite near. I must face the danger now, but I insist that you remain in the shelter of the forest."

It seemed as if she were conquered by his resolute tone, for she made no remonstrance when he hurried down the little hill to the strand. The fugitive evidently perceived his approach, and perhaps saw the gleam of the axe in his pursuer's hand, for he prepared for a struggle. Once more he raised his arm to fire his revolver, but he did not aim at Elmar, but turned the muzzle of the pistol towards the boat and discharged two shots in quick succession. It was a signal to his confederates, and Elmar knew that he must conquer speedily or perish.

The robber stood quietly in the spot where he had paused, threw the useless revolver on the sand, and tried to draw the sword that hung at his side, but as the bundle in his arms impeded him, and moreover would have made a successful defence impossible, he laid it carefully on the ground close beside him. When the pursuer approached with upraised axe, the sharp sword flashed forth to meet it, and the clash of the two metals striking against each other rang loudly on the silent night. Blow followed blow, but the assailant unfortunately found himself at a disadvantage, for with his strange weapon he was soon compelled to limit his efforts to warding off the strokes of the sword.

Just at that moment a dark object glided out of the woods, and with supple ease moved down the slope close beside the two combatants; and ere either of them noticed it or had the slightest suspicion of its design, the apparition with a hasty gesture snatched the bundle from the ground, and, in spite of its weight, darted swiftly back to the protecting forest.

A fierce imprecation burst from the robber's lips; he attempted to rush after his prey, thereby neglected to be on his guard, and only a hasty movement backward saved him from the death-dealing

blow of the axe. With a cry of fury, he now threw himself upon Elmar, who, defending himself with great difficulty, slowly retreated towards the forest. He felt that he was wounded in the shoulder, and could only offer a feeble resistance, but he held the robber in check; Erica could fly with the child.

He now received unexpected assistance. A gigantic man emerged from the trees and hastily approached the combatants. The huge axe on his shoulder and his herculean limbs must have excited the fears of the wearied robber, for he shrank back and gave Elmar time to reach the shelter of the forest.

Several men, however, were now hastily running up from the boat; the fugitive looked first at them and then at the gigantic figure of his enemy, at whose side Elmar, seeing the approaching foes, had placed himself. If a conflict took place, the men from the boat would doubtless conquer, for there were three of them armed with revolvers. Notwithstanding this, the robber seemed irresolute, glanced into the forest as if looking for the person who had stolen his prey, and then retreated a few steps towards the new-comers.

"Go! I want no fight, the plan has failed. Let us return to the ship."

He himself retired with the others, and as neither Elmar nor the woodcutter felt the slightest inclination to pursue them, their retreating figures soon vanished in the darkness.

"Come, sir," said his ally, "and if you are wounded lean on me. I'll take you to my hut."

XII.

THE RETURN.

ERICA's first act, when she knew that she was safe in the protecting forest, was to unfasten the cloth in which the poor boy was closely bound. She heard no sound, perceived no movement, and the terrible fear that the child was suffocated took possession of her soul. When she at last succeeded in unwinding the numerous folds, and little Carlos appeared, his eyes were closed, and no sign of life was visible. Erica screamed aloud in her grief and terror, and placing him on the ground threw herself sobbing beside him.

Life must have just fled, for the little body still felt soft and warm, and as she now covered his face with passionate tears and kisses, it seemed as if he breathed faintly. At this discovery her heart throbbed so violently that she was almost

unable to ascertain the truth of her hope. But when she had regained some degree of composure, she distinctly felt his low, regular breathing, exultantly raised him from the ground, and hurried towards the woodcutter's hut.

On reaching it, she pushed the door open and entered the little room, whose sole furniture consisted of a straw bed, a table, a chair without a back, and a fireplace where a few coals were glimmering, by means of which she hastily lighted a pine knot, and fastened the primitive torch in a recess, which the woodcutter probably used for this purpose. She then sprinkled water from the pitcher that stood on the table into the face of the senseless child, and soon saw him move and at last open his great blue eyes.

"Carlos!" she exclaimed joyously; "Carlos, don't be afraid; I am with you, I will take care of you. Don't you know me, Carlos?" she asked, bending over him, as she received no reply.

"Erica!" cried a voice from the door at the same moment, and Elmar entered with his guide.

"Here is our little fugitive, safe and sound," said Erica gayly, approaching Elmar with the child in her arms. "Kiss your uncle, little Carlos, and thank him for having saved you."

"Kiss the good fairy Erica, Carlos, and thank *her* for having saved you," replied Elmar.

"I certainly frightened the robber terribly," laughed Erica.

"No, but you alone wrested his prey from him."

"Well, we won't quarrel about it. I think we all did the best we could, and good Andreas also deserves a share of little Carlos' gratitude."

"He does indeed deserve gratitude; his appearance probably saved my life, for wounded as I was —"

"You are wounded?" Erica's cheeks lost their rosy hue so suddenly, that her pallor was visible even by the flickering light of the pine knot.

"Probably a mere scratch," cried Elmar hastily, "but it was painful enough for the time to be a drawback in the fight."

"Let me look at it, sir," said the giant Andreas, approaching Elmar.

On examination Elmar's coat was found to be completely soaked with blood, and as it was impossible to roll up the sleeve to reach the wound, Andreas ripped it with his knife. The cut instantly began to bleed profusely again; the woodcutter, who knew something about such injuries,

and had some bandages in his table-drawer, prepared to dress the wound, murmuring incoherent sentences like a conjuration.

Elmar smiled, but made no objection, especially as the blood really soon ceased to flow, and Andreas, spite of his huge hands, understood how to fasten the bandage firmly and painlessly. The sleeve of the coat was then sewed together with a few long stitches, and the little party now thought of returning.

"Andreas will accompany us with his axe," said Erica. "The robbers might return, or some other danger threaten us."

"And if possible carry a lantern to light the way," added Elmar.

Andreas laughed. "I have no lantern, sir. What use should it be? A lantern would only attract danger, if there were any."

"So I am taught a lesson from both sides," replied Elmar. "Well, you wise foresters, do exactly as you choose. Carlos and I will follow blindly."

Unfortunately, however, the little nephew did not fulfil his uncle's promise, for when the huge woodcutter approached to take him in his arms, he began to scream violently, and insisted upon staying with Erica. He even refused to let Elmar carry him, and with the obstinacy peculiar to spoiled children, would let no one touch him except Erica.

As the child could not possibly walk in the darkness, Erica was obliged to lift him in her arms, though with a faint sigh, while Elmar muttered between his teeth remarks by no means flattering to his nephew.

In this way the little procession moved slowly through the forest. Andreas went first, bearing his axe, and Elmar walked beside Erica. When they had moved on in silence for a short distance, Erica suddenly asked, —

"Did you recognize Herr von Wehlen in the robber?"

Elmar stood still in amazement. "Herr von Wehlen? What a strange idea, little fairy! Does he still hover before your mind as a bird of prey?"

"Yes, as a very dangerous and spiteful one, and I am sure that he alone is the originator of the plot."

"But I saw the man quite distinctly, and I assure you that there is not a shadow of resemblance between him and Wehlen."

"It may be so, then he did not perform the work himself, but engaged some one else."

"Little heather-blossom, you will surely vie with my nephew in obstinacy."

Erica, without entering into the joke, answered gravely, "First hear what I can tell you about the matter, and then judge for yourself." She then related the adventure of the double meeting, her second encounter with Wehlen in the churchyard, after which she had seen Wilms' wife approach the spot; and finally the long distance from home that little Carlos had been taken the day before, and in which the fisherman's wife evidently had some share, while the boat which was to take him away to-day waited at the same point on the shore, and Wehlen, coming from that direction, passed by them.

A short pause ensued, while Elmar was reflecting upon what he had heard. At last he said, "It certainly seems like adding link after link to a chain, but still I do not understand what motive could have induced Wehlen to steal the child. Was he in the father's service? I might suppose that the latter had instigated the boy's abduction, not through any love for the child, but for the sake of revenging himself upon the mother."

Erica made no reply, and Elmar was also silent, absorbed in his own thoughts. After a second pause, he exclaimed, "It may be so, Wehlen has the appearance of a clever adventurer, and the prince throws away his money with lavish hands when the point in question is the gratification of his passions. However," and the speaker's voice sank so low that his companion could scarcely distinguish the words, "I beg you not to inform my sister of your suspicions at present. Her conduct cannot be calculated upon, and unfortunately in moments of excitement she is not disposed to listen to reason. Wehlen is a clever, or let us say cunning, man; he will be on his guard, and thus we should only do harm instead of good. And one thing more, Erica. Don't go to the fairy castle with us. Carlos has fallen asleep and will not notice if we change places. I should like to protect you from the sight of Katharina's wild excitement, and besides, your mother will be anxious about your long absence."

"My mother had already retired, but old Christine will be frightened. We have taken a nearer way to the village, and shall pass close by our house. If I don't go with you, I must turn down this cross street. Hark, what is that? The village seems to be in an uproar. There is a confusion of voices, and now lights are gleaming everywhere."

"They seem to have lighted pine torches. Probably the boy's absence has

been discovered and the whole place alarmed."

Little Carlos, as if suspecting the excitement he had caused, suddenly awoke and gazed in astonishment at the approaching flames, but at the same time baffled all hope of Erica's escape, for she had scarcely attempted to put him out of her arms when he clung to her and began to cry.

"It was really hardly worth the trouble we took to bring the obstinate boy back," muttered Elmar indignantly, but made no farther effort to prevent Erica's accompanying him.

They soon approached the torch-bearers, and the shout of the giant Andreas, whose lungs seemed to be in proportion to his body, guided their steps towards the little party. They were surrounded, and as soon as the boy was seen, a loud exultant cheer echoed far and wide, then the torch-bearers ranged themselves around the group and escorted them in triumph through the village, while everywhere newcomers rushed out of the houses to join the procession, which at last advanced very slowly and with considerable difficulty.

Meantime, people returning from all directions brought in their reports, though somewhat vague ones, since everybody spoke principally of the alarm he had himself experienced. In spite of the confusion of voices, the little party only learned that the princess, on hearing of the child's disappearance, had fainted, and been carried home in an almost unconscious condition.

The lighted windows of the little fairy castle cast their radiance far into the darkness, various shadows moved to and fro, and it was evident that numerous sympathizing acquaintances had accompanied the princess home.

A crowd of people thronged the entrance hall and surrounded the new-comers with loud expressions of delight. It was scarcely possible to open the door leading into the room, and when Elmar, pushing forward, at last succeeded in doing so, he stood almost face to face with Herr von Wehlen. Both started back, but the latter quickly regained his composure, and said, cordially, —

"How glad I am to see you! Well, since you are here, you doubtless bring good news of the missing child. Whatever the others might say, I always believed that your disappearance was connected solely with the pursuit of the robber."

"I don't know what people could or might say concerning my disappearance; any sensible person, however, must certainly be of *your* opinion."

"And you bring good news?" asked Wehlen, eagerly.

"The best, the little fugitive himself," replied Elmar, looking his companion steadily in the face.

An expression of anger or suspicion flashed over Wehlen's features; but the next moment he controlled himself, and said with every token of joy, —

"Thank God for it. Where is the much-lamented Carlos?"

"If he has not been completely crushed by the good people in the hall, his bearer will, I think, at last succeed in entering the room."

At this moment the crowd of people at the door drew back, and gave Erica room enough to slip through with the boy. Wehlen had stepped forward, as if he wished to look at the child, and it seemed to the young girl as if his eyes expressed such furious hatred that she trembled and turned pale. Perhaps, however, it was an illusion caused by her own excitement, for the next instant his face was so radiant with joy that Erica began to doubt the evidence of her own senses.

A figure now rose from the sofa at the back of the room, which, as she approached nearer, revealed the agitated features of Fräulein Molly. This agitation, together with her disordered hair and dress, made her almost unrecognizable. She gazed at the boy with a stony stare, and when he bent towards her affectionately, shrank back and said coldly, —

"Go! I hate you!"

Erica was surprised and indignant at this conduct, but she had no time to give it any farther thought, for Elmar requested her to put down the boy, and taking him by the hand walked rapidly towards one of the doors, motioning to her to follow him. The large apartment which they entered was also filled with people, and from the midst of the throng came low sobs, pitiful wails, and sometimes a loud cry of agony, and when at the sight of Elmar the crowd involuntarily made way, they saw the princess lying on a divan. Her clothes were torn, her hair fell in disorder over her shoulders, and her hands were clenched convulsively.

Her eyes were closed, or she was unconscious, for she made no sign of recognition when Elmar and the child approached, and did not seem to notice the loud exclamations of surprise and joy that echoed

around her. Elmar, leading the boy by the hand, stood close beside the couch, but she still made no movement, and he at last exclaimed, —

"Kathinka! don't you see, don't you know us?"

She sprang up so suddenly that her dishevelled hair streamed wildly around her, gazed into her brother's face with a look of hatred, and cried in a tone that only too distinctly revealed the same feeling, —

"Robber, how dare you appear in my presence?"

Elmar laid his hand firmly on her shoulder, and bending over her said calmly, but with resolute decision, —

"Your excitement borders on insanity, Katharina. I have brought Carlos to you, but by Heaven you shall not touch him until you look less like a maniac."

"Carlos! Carlos!" shrieked Katharina, in a tone so piercing that the cry reached the ears of the throng assembled before the house; then starting up she tried to clasp the boy in her arms, but he fled screaming from his mother, whom he no longer recognized in this condition. Elmar instantly stepped between them, and prevented Katharina's progress. The restless eyes roved around as if seeking aid against her brother, but she felt his steady gaze fixed upon her, and at last, against her will, was forced to let her own uneasy glance meet his. Then she closed her eyes, and two large tears rolled down her cheeks as she said in a gentle, plaintive tone, —

"Why do you keep me from my child? don't you see how I am suffering?"

"Come, Carlos! go to your mother," cried Elmar; and the child, though somewhat reluctantly, obeyed the call. The princess clasped him passionately in her arms, but no longer showed the frantic agitation she had previously exhibited. She sat down on the divan, took the boy on her lap, and covered him with tears and kisses.

Elmar remained standing before the group, while relating to his sister and the assembled guests the events of the night. Scarcely mentioning his own share in the pursuit of the robber, he made Erica's services in saving the boy especially prominent, and also claimed the princess' gratitude in behalf of the gigantic Andreas and his axe.

Katharina rose, and taking the boy in her arms, went towards Andreas, who was very awkward in his embarrassment. Her features now wore a gentle, touching

expression, joy over the boy's restoration was struggling with the effects of her former anguish. She held out her soft white hand to the laborer and thanked him in a few heartfelt words, while tears dimmed her eyes. Andreas also passed his hand over his eyes, and stammered a reply, which perhaps fortunately for him nobody understood and therefore elicited a universal murmur of applause. But when search was now made for the principal heroine, Erica, it was all in vain, she had disappeared in the crowd.

Katharina seemed so exhausted with grief and joy that she sank back upon her divan, half fainting. Elmar therefore requested all present — whom at the same time he thanked, in his sister's name, for their sympathy — to leave the princess alone, as she was greatly in need of repose. The room was soon empty, and Elmar went in search of the maid, who most unaccountably had not been in the apartment. When he entered the adjoining room, he saw Herr von Wehlen just gliding out of the door, while Fräulein Molly sat at a table, covering her face with her hands.

"Where is the princess' maid?" asked Elmar, in a sterner tone than he had ever used towards the young lady. "How does it happen that my sister is deserted by all her servants just at the moment she most needs their help?"

Fräulein Molly removed her hands, and stared at the speaker.

"Do you include me among the servants, Baron von Altenborn?" she asked with a scornful curl of the lip.

"I spoke of the maid, Fräulein Molly," replied Elmar in his former harsh tone. "I saw you walking in the garden with Herr von Wehlen this evening, and therefore know that *you* cannot venture to appear before my sister, so my remark could have no reference to you."

"And did I hire myself out as a nurse," Molly passionately exclaimed, "that I must watch a sleeping child? Oh, how that woman has treated me, how she insulted and abused me before those people! And all because, for a moment, I forgot the shameful service imposed upon me, and went to walk in the garden a few minutes instead of sitting by the sleeping child. He was lying quietly on the sofa, carefully covered up — what harm could befall him in a friend's house? Could I have any suspicion of the accident that has happened?"

"Perhaps not. But as you promised to stay with the boy —"

"Promised?" interrupted Molly violently. "Say, rather, I was ordered to do so."

"Very well. As you had submitted to the command, you ought to have executed the commission."

"And if you recognized me in the garden," exclaimed Molly scornfully, "why did you not bestow this lecture upon me then, and frighten me back to my duty?"

"I have made amends for my neglect by restoring the boy to his mother, although perhaps I have thereby destroyed the dowry which was to have established the new household."

"What?" shrieked Molly approaching the speaker, her eyes flashing with angry excitement. "You dare to believe I aided this plot, I"—she faltered, and after a pause, during which she covered her eyes with her hand, continued, "That is a hard punishment for a slight error."

"Forgive me, *Fräulein* Molly," said Elmar, now moved in his turn; "I have not spoken truly, you were only the unconscious tool of this scoundrel."

Molly's eyes dilated to an almost terrible size, and she gazed into her companion's face with a fixed, stony stare. "Wehlen?" she murmured in a scarcely audible tone. "Is Wehlen said to be implicated in this deed?"

"I fear so, and I fear his attentions to you had no other object than to accomplish it. I seriously warn you to beware of him."

Molly had sunk into a chair, and again covered her face with her hands. Elmar bent over her and said cordially: "Forgive me, *Fräulein*, if I have caused you pain, but it could not be spared you. And now help me to look for the princess' servants, it is high time for her to go to rest."

She rose mechanically and followed him; they passed through the empty rooms, and at last found the people they sought, who were discussing what had happened with such eager interest that they had forgotten their duties. When Elmar knew his sister was safe in her maid's care, he retired to his own room, as his wound, which no one had noticed, was beginning to be excessively painful. Molly also went to her chamber, but not to rest; she paced up and down the room, murmuring broken sentences. Not until morning dawned did she throw herself upon a sofa, and fall into an uneasy slumber.

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CHARLOTTE BRONTE.

THE well-known phrase as to critics being made of poets who have failed, requires to be supplemented. The best critics are often the poets who have succeeded; a truth which has been more than once illustrated by Mr. Swinburne. I shall not ask whether this can be said unreservedly in reference to his recent essay upon Miss Brontë. As usual, he bestows the most enthusiastic and generous praise with a lavish hand, and bestows it upon worthy objects. And, as usual, he seems to be a little too much impressed with the necessary connection between illuminating in honor of a hero and breaking the windows or burning the effigies of the hero's rivals. I do not wish to examine the justice of his assaults, and still less to limp on halting and prosaic feet after his bounding rhetoric. I propose only to follow an inquiry suggested by a part of his argument. After all, though criticism cannot boast of being a science, it ought to aim at something like a scientific basis, or at least to proceed in a scientific spirit. The critic, therefore, before abandoning himself to the oratorical impulse, should endeavor to classify the phenomena with which he is dealing as calmly as if he were ticketing a fossil in a museum. The most glowing eulogy, the most bitter denunciation, have their proper place; but they belong to the art of persuasion, and form no part of scientific method. Our literary, if not our religious, creed should rest upon a purely rational ground, and be exposed to logical tests. Our faith in an author must in the first instance be the product of instinctive sympathy, instead of deliberate reason. It may be propagated by the contagion of enthusiasm, and preached with all the fervor of proselytism. But when we are seeking to justify our emotions, we must endeavor to get for the time into the position of an independent spectator, applying with rigid impartiality such methods as are best calculated to free us from the influence of personal bias.

Undoubtedly it is a very difficult task to be alternately witness and judge; to feel strongly, and yet to analyze coolly; to love every feature in a familiar face, and yet to decide calmly upon its intrinsic ugliness or beauty. To be an adequate critic is almost to be a contradiction in terms; to be susceptible to a force, and yet free from its influence; to be moving with the stream, and yet to be standing on the bank. It is especially difficult in the case of writers like Miss

Brontë, and of critics who were in the most enthusiastic age when her fame was in its early freshness. It is almost impossible not to have overpowering prejudices in regard to a character so intense, original, and full of special idiosyncrasy. If you did not love her, you must hate her; or, since hatred for so noble a sufferer would imply unreasonable brutality, we may say, feel strongly a hopeless uncongeniality of temperament. The power of exciting such feelings is, indeed, some testimony to an author's intrinsic force; and it may explain the assertion of her latest biographer. If it be true, as he says, that she has been comparatively neglected of late years, that is what may easily happen in the case of writers more remarkable for intensity than comprehensive power. Their real audience must always be the comparatively small number who are in sympathy with their peculiar moods. But their vigor begins by impressing and overawing a large number of persons who do not feel this spontaneous sympathy. They conquer by sheer force minds whom they do not attract by milder methods. In literature, at any rate, violent conquests are generally transitory; and, after a time, those who have obeyed the rule against their natural inclination fall away, and leave an audience composed of those alone who have been swayed by a deeper attraction. Charlotte Brontë, and perhaps her sister Emily in an even higher degree, must have a certain interest for all intelligent observers of character. But only a minority will thoroughly and unreservedly enjoy the writings which embody so peculiar an essence. Some scenery—rich pasturage and abounding rivers and forest-clad hills—appeals more or less to everybody. It is only a few who really love the lonely cairn on a wind-swept moor. An accident may make it the fashion to affect admiration for such peculiar aspects of nature; but, like all affectations, it will die away after a time, and the faithful lovers be reduced to a narrow band.

The comparative eclipse then—if eclipse there be—of Charlotte Brontë's fame does not imply want of power, but want of comprehensiveness. There is a certain *primâ facie* presumption against a writer who appeals only to a few, though it may be amply rebutted by showing that the few are also fit. The two problems must go together; why is the charm so powerful, and why is it so limited? Any intense personality has so far a kind of double-edged influence. Shakespeare sympathizes with everybody, and therefore

every one with him. Swift scorns and loathes a great part of the world, and therefore if people in general read Swift, or said honestly what they felt, most readers would confess to a simple feeling of aversion to his writings. There is, however, a further distinction. One may dislike such a man as Swift, but one cannot set him aside. His amazing intellectual vigor, the power with which he states some of the great problems of life, and the trenchant decision of his answer, give him a right to be heard. We may shudder, but we are forced to listen. If with equal force of character his intellectual power had been less, we should feel the shock without the mysterious attraction. He would be an unpleasant phenomenon, and one which might be simply neglected. It is because he brings his peculiar views to bear upon problems of universal interest that we cannot afford simply to drop him out of mind. The power of grasping general truths is necessary to give a broad base to a writer's fame, though his capacity for tender and deep emotion is that which makes us love or hate him.

Mr. Swinburne takes Miss Brontë to illustrate the distinction between "genius" and "intellect." Genius, he says, as the most potent faculty, can most safely dispense with its ally. If genius be taken to mean the poetic as distinguished from the scientific type of mind—that which sees intuitively, prefers synthesis to analysis, and embodies ideas in concrete symbols instead of proceeding by rule and measure, and constructing diagrams in preference to drawing pictures—the truth is undeniable and important. The reasoner gives us mechanism and constructs automata, where the seer creates living and feeling beings. The contrast used to be illustrated by the cases of Jonson and Shakespeare—by the difference between the imaginative vigor of "Antony and Cleopatra," and the elaborate construction of "Sejanus." We must add, however, that the two qualities of mind are not mutually exclusive. The most analytic mind has some spark of creative power, and the great creators are capable of deliberate dissection. Shakespeare could reflect, and Jonson could see. The ideally perfect mind would be capable of applying each method with equal facility in its proper place.

Genius, therefore, manifested in any high degree, must be taken to include intellect, if the words are to be used in this sense. Genius begins where intellect ends; or takes by storm where in-

tellec has to make elaborate approaches according to the rules of scientific strategy. One sees where the other demonstrates, but the same principles are common to both. To say that a writer shows more genius than intellect may mean simply that, as an artist, he proceeds by the true artistic method, and does not put us off with scientific formulæ galvanized into an internal semblance of life. But it may mean that his reflective powers are weak, that he has not assimilated the seminal ideas of his time, and is at a loss in the higher regions of philosophic thought. If so, you are setting limits to the sphere of his influence, and show that he is incapable of uttering the loftiest aspirations and the deepest emotions of his fellows. A great religious teacher may prefer a parable to a theory, but the parable is impressive because it gives the most vivid embodiment of a truly philosophical theory.

Miss Brontë, as her warmest admirers would grant, was not and did not in the least affect to be a philosophical thinker. And because a great writer to whom she has been gratuitously compared, is strong just where she is weak, her friends have an injudicious desire to make out that the matter is of no importance, and that her comparative poverty of thought is no injury to her work. There is no difficulty in following them so far as to admit that her work is none the worse for containing no theological or philosophical disquisitions, or for showing no familiarity with the technicalities of modern science and metaphysics. But the admission by no means follows that her work does not suffer very materially by the comparative narrowness of the circle of ideas in which her mind habitually revolved. Perhaps if she had been familiar with Hegel or Sir W. Hamilton, she would have intruded undigested lumps of metaphysics, and introduced vexatious allusions to the philosophy of identity or to the principle of the excluded middle. But it is possible, also, that her conceptions of life and the world would have been enriched and harmonized, and that, without giving us more scientific dogmas, her characters would have embodied more fully the dominating ideas of the time. There is no province of inquiry—historical, scientific, or philosophical—from which the artist may not derive useful material; the sole question is whether it has been properly assimilated and transformed by the action of the poetic imagination. By attempting to define how far Miss Brontë's powers were

in fact thus bounded, we shall approximately decide her place in the great hierarchy of imaginative thinkers. That it was a very high one, I take to be undeniable. Putting aside living writers, the only female novelist whom one can put distinctly above her is George Sand; for Miss Austen, whom some fanatics place upon a still higher level, differs so widely in every way that "comparison" is absurd. It is almost silly to draw a parallel between writers when every great quality in one is "conspicuous by its absence" in the other.

The most obvious of all remarks about Miss Brontë is the close connection between her life and her writings. Nobody ever put so much of themselves into their work. She is the heroine of her two most powerful novels; for Lucy Snowe is avowedly her own likeness, and Lucy Snowe differs only by accidents from Jane Eyre; whilst her sister is the heroine of the third. All the minor characters, with scarcely an exception, are simply portraits, and the more successful in proportion to their fidelity. The scenery and even the incidents are, for the most part, equally direct transcripts from reality. And, as this is almost too palpable a peculiarity to be expressly mentioned, it seems to be an identical proposition that the study of her life is the study of her novels. More or less true of all imaginable writers, this must be pre-eminently true of Miss Brontë. Her experience, we would say, has been scarcely transformed in passing through her mind. She has written down not only her feelings, but the more superficial accidents of her life. She has simply given fictitious names and dates, with a more or less imaginary thread of narrative, to her own experience at school, as a governess, at home, and in Brussels. "Shirley" contains a continuous series of photographs of Haworth and its neighborhood, as "Villette" does of Brussels; and if "Jane Eyre" is not so literal, except in the opening account of the school-life, much of it is almost as strictly autobiographical. It is one of the oddest cases of an author's self-delusion that Miss Brontë should have imagined that she could remain anonymous after the publication of "Shirley," and the introduction of such whole-length portraits from the life as the Yorke family. She does not appear to have been herself conscious of the closeness of her adherence to facts. "You are not to suppose," she says in a letter given by Mrs. Gaskell, "any of the characters in 'Shirley' intended as real portraits.

It would not suit the rules of art, nor of my own feelings, to write in that style. We only suffer reality to *suggest*, never to *dictate*." She seems to be thinking chiefly of her "heroes and heroines," and would perhaps have admitted that the minor personages were less idealized. But we must suppose also that she failed to appreciate fully the singularity of characters which, in her seclusion, she had taken for average specimens of the world at large. If I take my village for the world, I cannot distinguish the particular from the universal; and must assume that the most distinctive peculiarities are unnoticeably commonplace. The amazing vividness of her portrait-painting is the quality which more than any other makes her work unique amongst modern fiction. Her realism is something peculiar to herself; and only the crudest of critics could depreciate its merits on the ground of its fidelity to facts. The hardest of all feats is to see what is before our eyes. What is called the creative power of genius is much more the power of insight into commonplace things and characters. The realism of the De Foe variety produces an illusion, by describing the most obvious aspects of everyday life, and introducing the irrelevant and accidental. A finer kind of realism is that which, like Miss Austen's, combines exquisite powers of minute perception with a skill which can light up the most delicate miniatures with a delicate play of humor. A more impressive kind is that of Balzac, where the most detailed reproduction of realities is used to give additional force to the social tragedies which are being enacted at our doors. The specific peculiarity of Miss Brontë seems to be the power of revealing to us the potentiality of intense passions lurking behind the scenery of everyday life. Except in the most melodramatic—which is also the weakest—part of "Jane Eyre," we have lives almost as uneventful as those of Miss Austen, and yet charged to the utmost with latent power. A parson at the head of a school-feast somehow shows himself as a "Cromwell, guiltless of his country's blood;" a professor lecturing a governess on composition is revealed as a potential Napoleon; a mischievous schoolboy is obviously capable of developing into a Columbus or a Nelson; even the most commonplace natural objects, such as a row of beds in a dormitory, are associated and naturally associated with the most intense emotions. Miss Austen makes you feel that a tea-party in a country parsonage may be as amusing as the most brilliant meeting of

cosmopolitan celebrities; and Miss Brontë that it may display characters capable of shaking empires and discovering new worlds. The whole machinery is in a state of the highest electric tension, though there is no display of thunder and lightning to amaze us.

The power of producing this effect without stepping one hand's-breadth beyond the most literal and unmistakable fidelity to ordinary facts is explicable, one would say, so far as genius is explicable at all, only in one way. A mind of extraordinary activity within a narrow sphere has been brooding constantly upon a small stock of materials, and a sensitive nature has been enforced to an unusual pressure from the hard facts of life. The surroundings must surely have been exceptional, and the receptive faculties impressible even to morbidness, to produce so startling a result, and the key seemed to be given by Mrs. Gaskell's touching biography, which, with certain minor faults, is still one of the most pathetic records of a heroic life in our literature. Charlotte Brontë and her sister, according to this account, resembled the sensitive plant exposed to the cutting breezes of the West Riding moors. Their writings were the cry of pain and of only half-triumphant faith, produced by a lifelong martyrdom, tempered by mutual sympathy, but embittered by family sorrows and the trials of a dependent life. It is one more exemplification of the common theory, that great art is produced by taking an exceptionally delicate nature and mangling it slowly under the grinding wheels of the world.

A recent biographer has given us to understand that this is in great part a misconception, and, whilst paying high compliments to Mrs. Gaskell, he virtually accuses her of unintentionally substituting a fiction for a biography. Mr. Wemyss Reid's intention is excellent; and one can well believe that Mrs. Gaskell did in fact err by carrying into the earlier period the gloom of later years. Most certainly one would gladly believe this to be the case. Only when Mr. Reid seems to think that Charlotte Brontë was thoroughly a gay and high-spirited girl, and that the people of Haworth were commonplace, we begin to fear that we are in the presence of one of those well-meant attempts at whitewashing which "do justice" to a marked character by obliterating all its most prominent features. If Boswell had written in such a spirit, Johnson would have been a Chesterfield, and Goldsmith never have blundered in his talk. When we look at them

fairly, Mr. Reid's proofs seem to be curiously inadequate for his conclusions, though calculated to correct some very important misconceptions. He quotes, for example, a couple of letters, in one of which Miss Brontë ends a little outburst of Tory politics by saying, "Now, Ellen, laugh heartily at all that rhodomontade!" This sentence, omitted by Mrs. Gaskell, is taken to prove that Charlotte's interest in politics was "not unmingled with the happy levity of youth." Surely it is just a phrase from the schoolgirl's "Complete Letter-Writer." It would be as sensible to quote from an orator the phrase, "but I fear that I am wearying the House," to prove that he was conscious of being an intolerable bore. The next letter is said to illustrate the "infinite variety of moods" of her true character, and its rapid transitions from grave to gay, because, whilst expressing very strongly some morbid feelings, she admits that they would be contemptible to common sense, and says that she had been "in one of her sentimental humors." Did anybody ever express a morbid feeling without some such qualification? And is not "infinite," even in the least mathematical sense, rather a strong expression for two? A sentimental mood and a reaction are mentioned in one letter. That scarcely proves much gaiety of heart or variety of mood. If, indeed, Charlotte had always been at her worst, she would have been mad: and we need not doubt that she too had some taste of the gladness as of the sorrows of childhood. The plain truth is, that Miss Brontë's letters, read without reference to the disputes of rival biographers, are disappointing. The most striking thing about them is that they are young-ladyish. Here and there a passage revealing the writer's literary power shines through the more commonplace matter, but, as a whole, they give a curious impression of immaturity. The explanation seems to be, in the first place, that Miss Brontë, with all her genius, was still a young lady. Her mind, with its exceptional powers in certain directions, never broke the fetters by which the parson's daughter of the last generation was restricted. Trifling indications of this are common in her novels. The idealized portrait of Emily, the daring and unconventional Shirley, shows her utmost courage by hinting a slight reluctance to repeat certain clauses in the Athanasian Creed; and the energy with which the unlucky curates are satirized shows the state of mind to which even a young clergyman is still invested with

more or less superhuman attributes. The warmth is generated by the previous assumption that a young gentleman who dons a white neckcloth must, in the normal state of things, put off the schoolboy and develop a hidden pair of wings. The wrath excited by their failure to fulfil this expectation strikes one as oddly disproportionate. And, in the next place, it seems that, even in writing to her best friends, Miss Brontë habitually dreaded any vivid expression of feeling, and perhaps observed that her sentiments when spread upon letter-paper had a morbid appearance. There are many people who can confide in the public more freely than in the most intimate friends. The mask of anonymous authorship and fictitious personages has a delusive appearance of security. The most sacred emotions are for ourselves or for the invisible public rather than for the intermediate sphere of concrete spectators. The letters may dissipate some of Mrs. Gaskell's romantic gloom, but they do not persuade us that the Brontës were ever like their neighbors. The doctrine that the people of Haworth were really commonplace mortals, may be accepted with a similar reserve. Undoubtedly every Scotch peasant is not a Davie Deans, nor every Irishman a Captain Costigan. There are natives of the mining districts who do not throw half-bricks at every stranger they see; there are Yankees who do not chew tobacco, and Englishmen who do not eat raw beefsteaks. And so one may well believe that many inhabitants of Haworth would have passed muster at Charing Cross; and one may hope and believe that a man like Heathcliff was an exaggeration even of the most extravagant of the squires in Craven. If there were many such people in any corner of this world, it would be greatly in want of a thorough clearing out. And, therefore, one may understand why the good people of Haworth should be amazed when Mrs. Gaskell set forth as common types the gentleman who fired small shot from his parlor window at any one who came within convenient range, and the man who chuckled over his luck at dying just after insuring his life.

But, for all this, it is permissible also to suppose that there was a strongly marked provincial character in that region, even if Miss Brontë's lifelike portraits were not their own sufficient evidence. All people seem to be commonplace to the commonplace observer. Genius reveals the difference; it does not invent it. In one sense, doubtless, the people were commonplace

enough, and in that fact lay part of their offensiveness. Many of the upper classes, one may guess, were hard, crabbed men of business, with even less than the average of English toleration for sentiment or æsthetic fancies; and their inferiors were sturdy workmen, capable of taking a pride in their own brutality, which would have shocked gentler races. But the precise degree in which these characteristics were manifested must be left to the decision of local observers. We cannot affect to know accurately in what proportion the charge of originality is to be shared between the Brontës and their neighbors; how far the surroundings were unusually harsh and the surrounded abnormally tender. In any case, one may assume that Miss Brontë and her sisters were at once even morbidly sensitive and exposed to the contact of persons emphatically intolerant of morbid sentiment. Their ordinary relation to the outside world seems to be indicated by one peculiarity of Miss Brontë's writing. When young Mark Yorke sees that Moore has been flattered by hearing a lady describe him as "not sentimental," that offensive lad gets down a dictionary and endeavors to dash Moore's pleasure by proving that "not sentimental" must mean destitute of ideas. The trait is very probably from life, and is at any rate lifelike. There are many amiable people who take a keen pleasure in dashing cold water upon any little manifestation of self-complacency in their neighbors. To find out a man's tenderest corn, and then to bring your heel down upon it with a good rasping scrunch, is somehow gratifying to corrupt human nature. A kindly wit contrives to convey a compliment in affected satire. But the whole aim of a humorist of this variety is to convey the most mortifying truths in the most brutal plain-speaking. Now speeches modelled upon this plan are curiously frequent in Miss Brontë's conversations. Hunsden, the first sketch of the Yorke family in "The Professor," composes his whole talk of a string of brutal home-truths. The worse characters, like Miss Fanshawe in "Villette," thoroughly enjoy telling a friendless governess that she is poor, plain, and sickly. And even her favorites, Rochester and Shirley and Paul Emanuel, have just a leaning to the same trick of speech, though with them it is an occasional bitter to heighten the flavor of their substantial kindness. Miss Brontë has as little sense of humor as Milton or Wordsworth; but her nearest approach to it is in some of those shrewd, bitter say-

ings which are rather more of a jibe than a compliment. When one remembers that the originals of the Yorkes were amongst her most cherished and cultivated friends, and that they are admittedly painted to the life, one may fancy that she had received a good many of those left-handed compliments which seem to have done duty for pleasant jests in the district.

The soliloquies in which her heroines indulge proceed upon the same plan. Jane Eyre sits in judgment upon herself and listens to the evidence of Memory and Reason, accusing her of rejecting the real and "rabidly devouring the ideal." And she decides in accordance with her witnesses. "Listen, Jane Eyre, to your sentence; to-morrow place the glass before you and draw in chalk your own picture, faithfully, without softening one defect; omit no harsh line; smooth away no displeasing irregularity: write under it, 'Portrait of a governess, disconnected, poor, and plain!'"

Similar passages occur in "Shirley" and "Villette," and obviously represent a familiar mood. The original of this portrait was frequently engaged, it would seem, in forcing herself to hear such unpalatable truths. When other people snubbed her, after the fashion of the Yorkes, she might be vexed by their harshness, but her own thoughts echoed their opinion. Lucy Snowe is rather gratified than otherwise when Miss Fanshawe treats her to one of those pleasing fits of frank thinking aloud. She pardons the want of feeling for the sake of the honesty.

Sensitive natures brought into contact with those of coarser grain may relieve themselves in various ways. Some might have been driven into revolt against the proprieties which found so harsh an expression. Poor Branwell Brontë took the unluckily commonplace path of escape from a too frigid code of external morality which leads to the public-house. His sisters followed the more characteristically feminine method. They learnt to be proud of the fetters by which they were bound. Instead of fretting against the stern law of repression, they identified it with the eternal code of duty, and rejoiced in trampling on their own weakness. The current thus restrained ran all the more powerfully in its narrow channel. What might have been bright and genial sentiment was transformed and chastened into a kind of austere enthusiasm. They became recluses in spirit, sternly enforcing a self-imposed rule, though, in

their case, the convent walls were invisible and the objects of their devotion not those which dominate the ascetic imagination.

Theorists who trace the inheritance of rare characteristics might be interested in the curious development thus effected. The father of the family was an Irishman, and the mother a Cornish woman; the aunt, who succeeded her in the management of the household, had a persistent dislike for the character of her northern neighbors; even Charlotte herself, we are told, spake in her childhood with a strong Irish accent. And yet, as we find her saying in reference to the troubles of 1848, she has "no sympathy" with French or Irish. She had been spiritually annexed by the people with whom she lived. She was obtrusively and emphatically a Yorkshire woman, though only by adoption; she is never tired of proclaiming or implying her hearty preference of rough Yorkshire people to cockneys, sentimentalists, and that large part of the human race which we describe contemptuously as "foreigners." She is a typical example of the "patriotism of the steeple." She loved with her whole heart the narrowest insular type. She idolized the Duke of Wellington, with his grand contempt for humbug and ideas, terms synonymous — perhaps rightly synonymous — with many people. When she came in contact with fine foreigners and Papists, it only increased her hearty contempt for forms of character and religion, which one might have fancied *a priori* would have had many attractions for her. If at times she felt the æsthetic charm of parts of the Catholic system, she was but the more convinced that it was a poison, dangerous in proportion to its sweetness. The habit of trampling on some of her own impulses had become a religion for her. She had learnt to make a shield of reserve and self-repression, and could not be tempted to lay it aside when gentle persuasion took the place of rougher intimidation. Much is said by her biographers of the heroic force of will of her sister Emily, who presents the same type in an intensified form. Undoubtedly both sisters had powerful wills; but their natures had not less been moulded, and their characters, so to speak, turned inward by the early influence of surrounding circumstances. The force was not of that kind which resists the pressure from without, but of the kind which accepts and intensifies it, and makes a rigid inward law for itself of the law embodied in external conditions.

The sisters, indeed, differed widely, though with a strong resemblance. The iron had not entered so deeply into Charlotte's nature. Emily's naturally subjective mode of thought — to use the unpleasant technical phrase — found its most appropriate utterance in lyrical poetry. She represents, that is, the mood of pure passion, and is rather encumbered than otherwise by the necessity of using the more indirect method of concrete symbols. She feels, rather than observes; whereas Charlotte feels in observing. Charlotte had not that strange self-concentration which made the external world unreal to her sister. Her powers of observation, though restricted by circumstances and narrowed by limitations of her intellect, showed amazing penetration within her proper province. The greatest of all her triumphs in this direction is the character of Paul Emanuel, which has tasked Mr. Swinburne's powers of expressing admiration, and which one feels to be, in its way, inimitable. A more charming hero was never drawn, or one whose reality is more vivid and unmistakable. We know him as we know a familiar friend, or rather as we should know a friend whose character had been explained for us by a common acquaintance of unusual acuteness and opportunity of observation. Perhaps we might venture to add, that it is hardly explicable, except as a portrait drawn by a skilful hand guided by love, and by love intensified by the consciousness of some impassable barrier.

Mr. Swinburne compares this masterpiece of Miss Brontë's art with the famous heroes of fiction, Don Quixote, Uncle Toby, and Colonel Newcome. Don Quixote admittedly stands apart as one of the greatest creations of poetic imagination. Of Colonel Newcome I will not speak; but the comparison with Uncle Toby is enough to suggest what is the great secret both of Miss Brontë's success and its limitations. In one sense Paul Emanuel is superior even to such characters as these. He is more real: he is so real that we feel at once that he must have been drawn from a living model, though we may leave some indefinable margin of idealization. If the merit of fiction were simply its approach to producing illusion, we might infer that Paul Emanuel was one of the first characters in the world of fiction. But such a test implies an erroneous theory of art; and, in fact, the intense individuality of Paul Emanuel is, in a different sense, the most serious objection to him. He is a real human being who gave

lectures at a particular date in a *pension* at Brussels. We are as much convinced of that fact as we are of the reality of Miss Brontë herself; but the fact is also a presumption that he is not one of those great typical characters, the creation of which is the highest triumph of the dramatist or novelist. There is too much of the temporary and accidental—too little of the permanent and essential.

We all know and love Uncle Toby, but we feel quite sure that no such man ever existed except in Sterne's brain. There may have been some real being who vaguely suggested him; but he is, we assume, the creation of Sterne, and the projection into concrete form of certain ideas which had affected Sterne's imagination. He is not, indeed, nor is any fictitious character, a creation out of nothing. Partly, no doubt, he is Sterne himself, or Sterne in a particular mood; but Uncle Toby's soul, that which makes him live and excite our sympathy and love, is something which might be expressed by the philosopher as a theory, and which has been expressed in an outward symbol by an artist of extraordinary skill. Don Quixote is of perennial interest, because he is the most powerful type ever set forth of the contrast between the ideal and the commonplace, and his figure comes before us whenever we are forced to meditate upon some of the most vital and most melancholy truths about human life. Uncle Toby, in a far less degree, is a great creation, because he is the embodiment of one answer to a profound and enduring problem. He represents, it has been said, the wisdom of love, as Mr. Shandy exemplifies the love of wisdom. More precisely he is an incarnation of the sentimentalism of the eighteenth century. It is a phenomenon which has its bad and its good side, and which may be analyzed and explained by historians of the time. Sterne, in describing Uncle Toby, gave a concrete symbol for one of the most important currents of thought of the time, which took religious, moral, and political, as well as artistic, shapes. In many ways the sentiment has lost much of its interest for us; but, though an utterance of an imperfect doctrine, we may infer that Uncle Toby's soul will transmigrate into new shapes, and perhaps develop into higher forms.

When we measure M. Paul Emanuel by this test, we feel instinctively that there is something wanting. The most obvious contrast is that M. Emanuel is no humorist himself, nor even a product of humor. The imperfections, the lovable absurdities,

of Uncle Toby are imbedded in the structure of character. His whims and oddities always leave us in the appropriate mood of blended smiles and tears. Many people, especially "earnest" young ladies, will prefer M. Paul Emanuel, who, like his creator, is always in deadly earnest. At bottom he is always (like all ladies' heroes) a true woman, simple, pure, heroic, and loving—a real Joan of Arc, as Mr. Thackeray said of his creator, in the beard and blouse of a French professor. He attaches extravagant importance to trifles, indeed, for his irascible and impetuous temperament is always converting him into an *Æolus* of the duck-pond. So far there is, we may admit, a kind of pseudo-humorous element in his composition; but the humor, such as it is, lies entirely on the surface. He is perfectly sane and sensible, though a trifle choleric. Give him a larger sphere of action, and his impetuosity will be imposing instead of absurd. It is the mere accident of situation which gives, even for a moment, a ludicrous tinge to his proceedings.

Uncle Toby, on the contrary, would be even more of a humorist as a general on the battle-field than in his mimic sieges on the bowling-green. The humor is in his very marrow, not in his surroundings; and the reason is that Sterne feels what every genuine humorist feels, and what, indeed, it is his main function to express—a strong sense of the irony of fate, of the queer mixture of good and bad, of the heroic and the ludicrous, of this world of ours, and of what we may call the perversity of things in general. Whether such a treatment is altogether right and healthy is another question; and most certainly Sterne's view of life is in many respects not only unworthy, but positively base. But it remains true that the deep humorist is finding a voice for one of the most pervading and profound of the sentiments raised in a philosophical observer who is struck by the discords of the universe. Sensitiveness to such discords is one of the marks of a truly reflective intellect, though a humorist suggests one mode of escape from the pain which they cause, whilst a philosophic and religious mind may find another and perhaps a more profound solution.

Now M. Paul Emanuel, admirable and amiable as he is, never carries us into the higher regions of thought. We are told, even ostentatiously, of the narrow prejudices which he shares, though they do not make him harsh and uncharitable. The prejudices were obvious in this case to the

creator, because her own happened to be of a different kind. The "Tory and clergyman's daughter" was rather puzzled by finding that a bigoted Papist with a Jesuit education might still be a good man, and points out conscientiously the defects which she ascribes to his early training. But the mere fact of the narrowness, the want of familiarity with a wider sphere of thought, the acceptance of a narrow code of belief and morality, does not strike her as in itself having either a comic or a melancholy side. M. Paul has the wrong set of prejudices, but is not as wrong as prejudiced; and therefore we feel that a Sterne, or, say, a George Sand, whilst doing equal justice to M. Emanuel's excellent qualities, would have had a feeling (which in her was altogether wanting) of his limitation and his incongruity with the great system of the world. Seen from an intellectual point of view, placed in his due relation to the great currents of thought and feeling of the time, we should have been made to feel the pathetic and humorous aspects of M. Emanuel's character, and he might have been equally a living individual and yet a type of some more general idea. The philosopher might ask, for example, what is the exact value of unselfish heroism guided by narrow theories or employed on unworthy tasks; and the philosophic humorist or artist might embody the answer in a portrait of M. Emanuel considered from a cosmic or a cosmopolitan point of view. From the lower standpoint accessible to Miss Brontë he is still most attractive; but we see only his relations to the little scholastic circle, and have no such perception as the greatest writers would give us of his relations to the universe, or, as the next order would give, of his relations to the great world without.

Although the secret of Miss Brontë's power lies, to a great extent, in the singular force with which she can reproduce acute observations of character from without, her most esoteric teaching, the most accurate reflex from her familiar idiosyncrasy, is of course to be found in the characters painted from within. We may infer her personality more or less accurately from the mode in which she contemplates her neighbors, but it is directly manifested in various avatars of her own spirit. Among the characters who are more or less mouthpieces of her peculiar sentiment we may reckon not only Lucy Snowe and Jane Eyre, but, to some extent, Shirley, and, even more decidedly, Rochester. When they speak we are really listening

to her own voice, though it is more or less disguised in conformity to dramatic necessity. There are great differences between them; but they are such differences as would exist between members of the same family, or might be explained by change of health or internal circumstances. Jane Eyre has not had such bitter experience as Lucy Snowe; Shirley is generally Jane Eyre in high spirits, and freed from harassing anxiety; and Rochester is really a spirited sister of Shirley's, though he does his very best to be a man, and even an unusually masculine specimen of his sex.

Mr. Rochester, indeed, has imposed upon a good many people; and he is probably responsible in part for some of the muscular heroes who have appeared since his time in the world of fiction. I must, however, admit that, in spite of some opposing authority, he does not appear to me to be a real character at all, except as a reflection of a certain side of his creator. He is in reality the personification of a true woman's longing (may one say it now?) for a strong master. But the knowledge is wanting. He is a very bold but necessarily unsuccessful attempt at an impossibility. The parson's daughter did not really know anything about the class of which he is supposed to be a type, and he remains vague and inconsistent in spite of all his vigor. He is intended to be a person who has surfeited from the fruit of the tree of knowledge, and addresses the inexperienced governess from the height—or depth—of his worldly wisdom. And he really knows just as little of the world as she does. He has to impose upon her by giving an account of his adventures taken from the first novel at hand of the early Bulwer school, or a diluted recollection of Byron. There is not a trace of real cynicism—of the strong nature turned sour by experience—in his whole conversation. He is supposed to be specially simple and masculine, and yet he is as self-conscious as a young lady on her first appearance in society, and can do nothing but discourse about his feelings, and his looks, and his phrenological symptoms, to his admiring hearer. Set him beside any man's character of a man, and one feels at once that he has no real solidity or vitality in him. He has, of course, strong nerves and muscles, but they are articles which can be supplied in unlimited quantities with little expense to the imagination. Nor can one deny that his conduct to Miss Eyre is abominable. If he had proposed to her to ignore the existence of the mad Mrs. Rochester, he would have acted like a

rake, but not like a sneak. But the attempt to entrap Jane into a bigamous connection by concealing the wife's existence, is a piece of treachery for which it is hard to forgive him. When he challenges the lawyer and the clergyman to condemn him after putting themselves in his place, their answer is surely obvious. One may take a lenient view of a man who chooses by his own will to annul his marriage with a filthy lunatic; but he was a knave for trying to entrap a defenseless girl by a mock ceremony. He puts himself in a position in which the contemptible Mr. Mason has a moral advantage.

This is by far the worst blot in Miss Brontë's work, and may partly explain, though it cannot justify, the harsh criticisms made at the time. It is easy now to win a cheap reputation for generosity by trampling upon the dead bodies of the luckless critics who blundered so hopelessly. The time for anger is past; and mere oblivion is the fittest doom for such offenders. Inexperience, and consequently inadequate appreciation of the demands of the situation, was Miss Brontë's chief fault in this matter, and most certainly not any want of true purity and moral elevation. But the fact that she, in whom an instinctive nobility of spirit is, perhaps, the most marked characteristic, should have given scandal to the respectable, is suggestive of another inference. What, in fact, is the true significance of this singular strain of thought and feeling, which puts on various and yet closely allied forms in the three remarkable novels we have been considering? It displays itself at one moment in some vivid description, or—for "description" seems too faint a word—some forcible presentation to our mind's eye of a fragment of moorland scenery; at another it appears as an ardently sympathetic portrayal of some trait of character at once vigorous and tender; then it utters itself in a passionate soliloquy, which establishes the fact that its author possessed the proverbial claim to knowledge of the heavenly powers; or again, it produces one of those singular little prose-poems—such as Shirley's description of Eve—which, with all their force, have just enough flavor of the *devoirs* at M. Heger's establishment to suggest that they are the work of an inspired schoolgirl. To gather up into a single formula the meaning of such a character as Lucy Snowe, or in other words of Charlotte Brontë, is, of course, impossible. But at least such utterances always give us the impression of a fiery soul impris-

oned in too narrow and too frail a tenement. The fire is pure and intense. It is kindled in a nature intensely emotional, and yet aided by a heroic sense of duty. The imprisonment is not merely that of a feeble body in uncongenial regions, but that of a narrow circle of thought, and consequently of a mind which has never worked itself clear by reflection, or developed a harmonious and consistent view of life. There is a certain feverish disquiet which is marked by the peculiar manner of the style. At its best, we have admirable flashes of vivid expression, where the material of language is the incarnation of keen intuitive thought. At its worst, it is strangely contorted, crowded by rather awkward personifications, and degenerates towards a rather unpleasant Ossianesque. More severity of taste would increase the power by restraining the abuse. We feel an aspiration after more than can be accomplished, an unsatisfied yearning for potent excitement, which is sometimes more fretful than forcible.

The symptoms are significant of the pervading flaw in otherwise most effective workmanship. They imply what, in a scientific sense, would be an inconsistent theory, and, in an æsthetic sense, an inharmonious representation of life. One great aim of the writing, explained in the preface to the second edition of "Jane Eyre," is a protest against conventionality. But the protest is combined with a most unflinching adherence to the proper conventions of society; and we are left in great doubt as to where the line ought to be drawn. Where does the unlawful pressure of society upon the individual begin, and what are the demands which it may rightfully make upon our respect? At one moment in "Jane Eyre" we seem to be drifting towards the solution that strong passion is the one really good thing in the world, and that all human conventions which oppose it should be disregarded. This was the tendency which shocked the respectable reviewers of the time. Of course they should have seen that the strongest sympathy of the author goes with the heroic self-conquest of the heroine under temptation. She triumphs at the cost of a determined self-sacrifice, and undoubtedly we are meant to sympathize with the martyr. Yet it is also true that we are left with the sense of an unsolved discord. Sheer stoical regard for duty is represented as something repulsive, however imposing, in the figure of St. John Rivers, and virtue is rewarded by the arbitrary removal of the obstacles

which made it unpleasant. What would Jane Eyre have done, and what would our sympathies have been, had she found that Mrs. Rochester had not been burnt in the fire at Thornfield? That is rather an awkward question. Duty is supreme, seems to be the moral of the story; but duty sometimes involves a strain almost too hard for mortal faculties.

If in the conflict between duty and passion the good so often borders upon the impracticable, the greatest blessing in the world should be a will powerful enough to be an inflexible law for itself under all pressure of circumstances. Even a will directed to evil purposes has a kind of royal prerogative, and we may rightly do it homage. That seems to be the seminal thought in "Wuthering Heights," that strange book to which we can hardly find a parallel in our literature, unless in such works as "The Revenger's Tragedy," and some other crude but startling productions of the Elizabethan dramatists. But Emily Brontë's feeble grasp of external facts makes her book a kind of baseless nightmare, which we read with wonder and with distressing curiosity, but with far more pain than pleasure or profit. Charlotte's mode of conceiving the problem is given most fully in "Villette," the book of which one can hardly say, with a recent critic, that it represents her "ripest wisdom," but which seems to give her best solution of the great problem of life. Wisdom, in fact, is not the word to apply to a state of mind which seems to be radically inconsistent and tentative. The spontaneous and intense affection of kindred and noble natures is the one really precious thing in life, it seems to say, and, so far, the thought is true or a partial aspect of the truth, and the high feeling undeniable. But then, the author seems to add, such happiness is all but chimerical. It falls to the lot only of a few exceptional people, upon whom fortune or providence has delighted to shower its gifts. To all others life is either a wretched grovelling business, an affair of making money and gratifying sensuality, or else it is a prolonged martyrdom. Yield to your feelings, and the chances are enormously great that you are trampled upon by the selfish, or that you come into collision with some of those conventions which must be venerated, for they are the only barriers against moral degradation, and which yet somehow seem to make in favor of the cruel and the self-seeking. The only safe plan is that of the lady in the ballad, to "lock your heart in a case of gold, and pin it with

a silver pin." Mortify your affections, scourge yourself with rods, and sit in sackcloth and ashes; stamp vigorously upon the cruel thorns that strew your pathway, and learn not to shrink when they lacerate the most tender flesh. Be an ascetic, in brief, and yet without the true aim of the ascetic. For, unlike him, you must admit that these affections are precisely the best part of you, and that the offers of the Church, which proposes to wean you from the world, and reward you by a loftier prize, are a delusion and a snare. They are the lessons of a designing priesthood, and imply a blasphemy against the most divine instincts of human nature.

This is the unhappy discord which runs through Miss Brontë's conceptions of life, and, whilst it gives an indescribable pathos to many pages, leaves us with a sense of something morbid and unsatisfactory. She seems to be turning for relief alternately to different teachers, to the promptings of her own heart, to the precepts of those whom she has been taught to revere, and occasionally, though timidly and tentatively, to alien schools of thought. The attitude of mind is, indeed, best indicated by the story (a true story, like most of her incidents) of her visit to the confessional in Brussels. Had she been a Catholic, or a positivist, or a rebel against all the creeds, she might have reached some consistency of doctrine, and therefore some harmony of design. As it is, she seems to be under a desire which makes her restless and unhappy, because her best impulses are continually warring against each other. She is between the opposite poles of duty and happiness, and cannot see how to reconcile their claims, or even—for perhaps no one can solve that, or any other great problem exhaustively—how distinctly to state the question at issue. She pursues one path energetically, till she feels herself to be in danger, and then shrinks with a kind of instinctive dread, and resolves not only that life is a mystery, but that happiness must be sought by courting misery. Undoubtedly such a position speaks of a mind diseased, and a more powerful intellect would even under her conditions have worked out some more comprehensible and harmonious solution.

For us, however, it is allowable to interpret her complaints in our own fashion, whatever it may be. We may give our own answer to the dark problem, or at least indicate the path by which an answer must be reached. For a poor soul so grievously beset within and without by troubles in which we all have a share, we can but

feel the strongest sympathy. We cannot sit at her feet as a great teacher, nor admit that her view of life is satisfactory or even intelligible. But we feel for her as for a fellow-sufferer who has at least felt with extraordinary keenness the sorrows and disappointments which torture most cruelly the most noble virtues, and has clung throughout her troubles to beliefs which must in some form or other be the guiding lights of all worthy actions. She is not in the highest rank amongst those who have fought their way to a clearer atmosphere, and can help us to clearer conceptions; but she is amongst the first of those who have felt the necessity of consolation, and therefore stimulated to more successful efforts.

From Good Words.

DORIS BARUGH.

A YORKSHIRE STORY.

BY THE AUTHOR OF "PATTY."

CHAPTER XLI.

PLOTTING.

DORIS despatched her letter, and then she sat in troubled thought.

It had been a severe wrench to yield her hopes about George, but she felt that they were groundless; and as she must give them up, she did it at once, without looking back or spending more time in regret.

This was not the cause of her trouble.

She was thinking of her child, and how baneful Faith's influence would be as little Phil's rapid development progressed. Would it not be safest and wisest at once to send the housekeeper away? and yet Doris shrank from proposing this to her husband. She believed that he would agree to her wish, but still she shrank from making the request. Mr. Burneston had told her more than once that she disliked Faith because the housekeeper petted Ralph.

"If he would only go away and never come back again!" burst from her impetuously. "He blights my life; he makes me unhappy, for he makes me wicked; he makes me feel hard to myself. Till he came home I was as happy as I could wish, except"—she paused, as a vision of her mother, and a shrinking from her mother's hints that she would like to see Burneston Hall, rose in her mind—"ex-

cept for one or two things, and now I always feel wrong and vexed. I am hurt if Philip even speaks about Ralph, and no wonder. I have never told of his conduct to Rose; if his father knew all, he would not be so lenient to him. I only dislike him because he is bad and contemptible. No, I am not hard on him." She had begun to walk up and down as she argued with herself, and she stopped short now as if she were answering a suggestion. "If he were good—good as my Phil will be, I think I should like him; if he were good he would like me—and—and——" She resumed her rapid walk. "It is useless to struggle," she said. "I've struggled till I am tired. I hate Ralph! He always makes me feel that I am low-born. I lose my self-possession. I seem not to believe in myself when he is present. I never disliked any one before, unless it was Rose Duncombe. I am determined he shall not make Rica fond of him. She is very impulsive still, and he might set her against me. I cannot give up Rica's friendship; it is more necessary to me than I thought it was. I can tell her things which I could not talk of to Philip; besides, I want to tell her of my doubts about Ralph."

She went to the window and looked out. Ralph and Rica were walking up and down the terrace. She was talking eagerly, and his eyes were fixed admiringly on her flushed, enthusiastic face.

A spasm of sudden jealousy brought the blood springing to Doris's cheeks. She leaned forward, and as she leaned she saw that she was not the only gazer. Faith Emmett was also looking from Ralph's window at the young pair as they moved slowly along beside the grey flower and fern wreathed wall that bordered the river. Faith was smiling in most unusual fashion, and Doris felt yet more irritated.

"That woman *shall* go if she thwarts me at every turn," she said haughtily. "I suppose she thinks Rica is an amusement brought here to occupy Ralph as long as he chooses—but how foolish I am! Her opinion is of no consequence."

Just then, as if she read her friend's thoughts, Rica looked up, and Doris beckoned with unwonted eagerness.

"There's something the matter, I think," said Rica; "I must go to Mrs. Burneston."

"Never mind Mrs. Burneston; she can wait, she can have you any time, and I want you now." Ralph spoke imperiously, and Rica laughed.

"You are nobody beside Doris," she

said smilingly, and nodding up at her friend's window, she ran indoors.

At the foot of the stairs she met Mr. Burneston.

"Are you going to Doris?" he said; "then will you tell her that I expect my cousin, Mr. Raine, this evening? I asked him some days ago, and as there's no answer, he's sure to come." He looked at her carelessly, but it seemed to Rica that he wanted to see the effect of his words, and she tried so hard to keep an unmoved face that Mr. Burneston thought she was vexed.

"Dear me!" he thought, as he went on to the library; "I fancied we should be more cheerful with Raine here, but it seems I am mistaken. Rica looked quite disconcerted at the idea. I'd better ask Doris why she dislikes him—dear me, what strange creatures women are!" and the soft-hearted squire sat down to finish his newspaper with a disappointed face.

Meantime Ralph had gone to his room, and had found Faith there. He sat down without speaking.

"She's a nice young lady, is Miss Masham, Maister Ralph. She's a real lady." She looked at him keenly between her half-closed lids.

"Yes, old woman, but never mind ladies now. Is there a good dinner? I shall have to give Mrs. Hazelgrave a few lessons in cooking if she sends up such a fricandeau as she did yesterday; it was so tough I could hardly set my teeth in it, and I actually could taste the onions. She really must be less coarse in her notions of flavoring. She wants to go to France for a few months."

"Ah, well, I'll tell her what you say, my dear. Do you know Mr. and Mrs. Boothroyd an' Mr. Raine's coming to-night? then mebbe we'll give you something else to think about besides cooking. He's got an eye in his head, tho' he is so crammed wi' noissions."

"To-night is it? I did not know he was coming; I can amuse myself without him, you old goose."

Faith looked mysterious. She went over to the drawers which she had been putting neat, but presently she closed them and turned round.

"Mebbe two is better than three, Maister Ralph; an' Master Raine's ower maisterful, yu kens."

Ralph stared. "I don't know what you mean, you dear old stupid," he said. "You know I hate hints, Faith; but Gilbert has too much sense to interfere with

me. I should like to see any one master me in my own house."

He had been lighting a cigar while he spoke, and he seated himself with his back to the housekeeper, and began to smoke in silence.

Faith stood gazing—at first vacantly, with her unpleasant smile; then, as her yellow eyes rested on her darling's curly head, her straight lip softened, and her eyes grew dark and sweet.

"He's nowt to fear," she said to herself. "Miss Masham'll not look twice at an awd stick like Mr. Raine wiv that bonny face beside her. Nae, nae, if my lad hes fair play it's all reet; but it's t' missis I'm freeten'd on. She'll do any mortal thing to spite Ralph and tak t' lass frev him. She didn't guess I saw her at yon window froonin' as she looked at t' two on 'em—just as I was gladdenin' my eyes by t' sight o' sich a bonny pair; an' then to call her away when t' poor lass, mebbe, niver had t' chance afore o' speakin' to such a fine gentleman as my lad. She's nut a match for t' likes o' him, is Miss Masham, but she'll serve to pass time, an' she shannot be taken frev him."

She went out of the room with her usual catlike tread, her eyes and cheeks glowing with the new interest brought into her daily life. Faith Emmett had missed her vocation, she should have been an actress or a police agent, and not having legitimate scope for her talent for intrigue, she was always ready to snatch at and exaggerate every incident of domestic life which could be twisted out of a direct course. It is strange how sensitive such natures are to atmosphere. Doris had only been reawakened to a dread of Faith's mischief-making power by her child's appeal, but Faith knew intuitively that Doris disliked her, and she had decided that the young stepmother would hate Ralph long before his first return from school, and her constant depreciation and innuendoes had strengthened and kept alive the strong prejudice the lad had formed against his father's wife; but for this it is possible that the easy temperament inherited from his father (and before he went to France Ralph's chief characteristic was this easiness) would have softened this dislike and left him open to her influence.

Doris's jealous dislike to the lad had been fostered by Ralph's coldness, and the barrier it raised against all her attempts at cordiality. To Doris government was a necessity. Spite of her father's strong will she had always had power to sway

him; her husband yielded implicitly to her judgment; perhaps the secret of her childish disputes with George was that his will had been as strong as her own, and that he would only yield to a principle which he did not find in his sister. She was large-minded enough to tolerate his resistance, but although she never analyzed her dislike to Ralph, she felt keenly the mortification inflicted by his resistance to her influence, for on this last visit he never lost an opportunity of contradicting her.

"Why on earth," he said to himself as he sat smoking—a practice forbidden in any part of the house but the billiard-room, but connived at by the housekeeper—"why should Gilbert come just now? He's well enough when there's no one else, but he has taken to lecturing lately. I expect Mrs. Burneston's had a hand in this; I owe her one, already, on another score. By Jove, she'd better let me alone in future!"

CHAPTER XL.

"FIRST IMPRESSIONS."

DORIS never showed to so much advantage as when she was receiving her guests. Her natural calm self-possession so helped the sweetness and grace which education had developed that at such times her manner was enchanting. She had long ago conquered her old enemy Mrs. Boothroyd, who was now her slave. Perfection in a woman, according to Mrs. Boothroyd, lay in the possession of some charming accomplishments—playing and singing, for instance, like Mrs. Burneston—and also in the strict observance of all the duties inculcated by society. During Doris's first visit to London, Mrs. Boothroyd had watched her behavior narrowly, and had been so satisfied by the result that on the return of the squire and his wife to Yorkshire she had received her young neighbor with much increased cordiality, and when little Phil was born her attentions had become devoted.

She was a valuable friend to Doris, for being one of those women who announce opinion and insist on its adoption by others, utterly regardless whether offence is given or taken, Mrs. Boothroyd had far more influence in her part of the county than she really merited; so apt are people to be allowed the position they claim boldly for themselves. With all her assumption and hardness she had a love of the beautiful, and she had an affectionate nature; and after a while she craved for the love of this beautiful bit of porcelain,

as she called Mrs. Burneston, and came often to see her. Perhaps if Doris had met her advances with any show of warmth there might have been an end of the friendship, but the complete absence of "gush" in the girl's nature increased Mrs. Boothroyd's attempts to overcome her coldness; and these seemed to Doris only a part of the almost universal homage that she had met with in her school life, and also since her marriage.

She had grown to consider Mrs. Boothroyd a sort of motherly friend, to whom she could talk about little Phil and also household plans; and she was really glad to see her this evening.

"Ah, Mrs. Burneston"—Mr. Boothroyd puffed out his words as pompously as ever—"you look as blooming as a rose." The good gentleman's similes were always of the simplest nature.

Doris smiled. "Am I blooming?" she said. "I fancy I am too colorless to deserve the name."

"Yes, indeed, Melville,"—his wife had long withdrawn her prohibition against compliments paid to the mistress of Burneston,—"*blooming* is not refined enough for Mrs. Burneston. *Blooming* means a rosy color, a dairymaid beauty, a——"

"I beg your pardon, my dear, but youth and good health will sometimes give a high color, even to young ladies. You can't help it, you know, and what suits one doesn't suit another."

Rica's rosy cheeks were deep red by this time. "I suppose not. I've always been rosy," she said with a sigh which set Gilbert Raine and Mr. Burneston off laughing.

Just then they paired off to go to dinner. Doris forced a smile as she spoke to Ralph. "I am very sorry," she said, "that there is no one for you, but I did not know till too late that your cousin was coming to-day." Then she looked at Raine as he gave his arm to Rica.

Ralph looked savage, but he managed nevertheless to get next Rica at dinner, and to keep her from talking much to Raine.

Rica could not tell how it was. In the morning she had certainly thought Ralph flippant, but still very amusing; now he seemed to her pert and sarcastic. She wondered at Mr. Raine's patience with him, for more than once Ralph spoke rudely to his cousin. "However," she thought as she looked at Raine's intellectual face, eager with interest, now as he combated an argument of Mr. Boothroyd's, now as he uttered one of his dry, quaint

sayings, "I do not suppose he notices; he has no heart or much interest for anything but those horrible old blocks of stone. I believe he is half a stone himself." She turned her thoughts resolutely away from her unconscious *vis-à-vis*, and began to talk to Ralph with more vivacity than she had shown since the beginning of dinner.

At last these two laughed so heartily over one of Rica's stories that Mrs. Boothroyd turned round with a lofty rebuke on her face. Rica met the look, and although she braved it she felt very sick at heart, lest Doris should also disapprove. She had observed the coldness between her friend and Ralph, but her hopeful nature attached little importance to this. "It will all come right in time," she thought, but for all that she wished to avoid any collision on the subject of Ralph. She loved Doris, and thought her almost perfect, but she knew that if she found her friend hard on Ralph she should certainly take his part against his stepmother. She lowered her voice as she went on talking.

Raine was puzzled and vexed. He had not met Miss Masham for three years, and their intimacy had been ended abruptly by his sudden journey to Eton. In the interval Gilbert had learned that it was possible to think again about a woman, all the while despising himself for wasting his thoughts on such an unworthy object. When the squire's letter of invitation reached him he had caught himself wondering whether he should meet Rica at Burneston again, and when he found her sitting with Doris on his first arrival something very like delight came to him, a sensation of keener, warmer pleasure than any he had felt since his first romance ended.

But Rica's manner wounded Mr. Raine. She seemed flurried and excited, vexed, he thought, to have her *tête-à-tête* with Mrs. Burneston disturbed; and now, as he sat opposite her and caught glimpses of her bright face full of laughing enjoyment, he felt sure that he had been wrong, and that Miss Masham had no more heart or ballast than any ordinary woman.

And yet as she rose from table and followed Mrs. Boothroyd from the room, his eyes instantly followed the young girl with admiration. She had none of the statuesque grace of Mrs. Burneston; her movements, and words too, were sometimes abrupt; but there was a freshness and simplicity in Rica, an almost startling vivacity, that suited Raine's taste better than the finish and repose of her friend.

She laughed saucily as she went out, and Raine followed the direction of her eyes to Ralph across the table. It seemed to him that these two young creatures exchanged a look of mischievous intelligence.

He frowned, not at them but at his own folly.

"I wonder," he thought, "at what period of their lives men become safe—impervious to woman's will. I fancied it impossible I would ever risk being again deceived. That sudden summons to Eton came just in time, and yet if I had seen more of her then, I should no doubt have discovered imperfections. I should have found out her real self. This Rica Masham I have been dreaming about, when I have thought of such folly at all"—a flush of annoyance rose on his cheek—"was a creature of my own making, quite unlike the true woman."

"Come, Ralph," he said, as the two squires drew close together and began to talk agricultural matters, "shall we take a turn by the river? it's long since you and I were together at Burneston."

Ralph hesitated; he had been surprised and annoyed to hear of his cousin's arrival; he thought he had been sent for to lecture him about Rose, "spoiling my game, too, with Rica—an old fossil!"

"Very well, but let's have a smoke afterwards," he said; "but I mean to go to the drawing-room now—that poor little girl will get bored to death with the dowagers."

For the first time in his life Gilbert Raine felt very angry with Ralph. He had always felt it a kind of duty to take the lad's part against his father, for he considered that even before his second marriage Philip Burneston had neglected his son, but this speech of Ralph's was so puppy-like that Gilbert felt as if he had suddenly awakened, and was taking a new reading of his *protégé*.

"Young coxcomb!" he said to himself as he walked rather stiffly into the drawing-room and left Ralph to close the door, "but perhaps I should say, deluded young fool! Very likely he thinks, poor boy, that Miss Masham really cares to talk to him."

It seemed as if Ralph held this opinion, for he walked straight up to the bow-window in which Rica was, and sat down beside her. Gilbert fumed inwardly against Mrs. Boothroyd, who had stopped him as he came in.

"You care for art, I believe, Mr. Raine, and I want you so much to come over and

see us. I can offer you quite a treat in Mr. Boothroyd's drawings; he copies things in pen and ink so beautifully you could not tell them from the originals—things from the *Penny Magazine*, you know, and other prints."

"I don't care for copies of things," said Gilbert almost savagely, "there's nothing original in it; it is a waste of time."

Mrs. Boothroyd stared. "Ah, but you never saw anything like Mr. Boothroyd's drawings; he does them line for line. He gives up his winter evenings entirely to it, never has time to read a book, or hardly a newspaper; it is such important, all-absorbing work."

Raine shrugged his shoulders. "My dear madam, I'm sorry I can't agree with you; nothing, I think, can be so important in the way of personal pursuit as reading, and it is especially necessary to us country residents—to all, in fact, who live in a small circle." He said this, much as if he had added, "My dear madam, consider yourself in the wrong."

Mrs. Boothroyd smiled loftily, but Doris looked so interested that for the moment Raine forgot Ralph and Rica.

"That may be for some people"—Mrs. Boothroyd gave Gilbert a compassionate glance. "But you see Mr. Boothroyd's mind is so large and comprehensive, and then he has such a store of past reading to go on, that I don't think he requires to read as some do; he did it all as a boy; no fiction or poetry or rubbish of that kind, you know, but solid stuff—Gibbon's 'Decline and Fall,' Alison's 'History of Europe,' and as to 'Lardner's Cyclopædia'—those puce-colored calico books, you know—I fancy he has them by heart. Mr. Boothroyd is very solid; no froth about him, I assure you."

Ralph had been annoyed to find that instead of listening to him, Rica's ears had been strained to follow this conversation; and now, as Doris sat silent, her eyes fixed on the opposite wall, Miss Masham broke in suddenly with glowing eyes and cheeks.

"My father says it's all nonsense not to read novels, and a great mistake. He says people often get ideas and hints and things—in good ones, I mean—not in the way of lectures or advice, but unconsciously given. Oh, will it bore you if I explain myself?"—she looked imploringly at Mrs. Boothroyd, while Raine wondered whether she was acting or whether her freshness was real. "He says people are so apt to go on wrapt

up in themselves and their pursuits till they absorb their own sympathies, or rather neglect to cultivate their own powers of appreciation, and that often a character in a story will act like a fairy mirror, showing one the distortion one is aiming after, or else reminding one of the qualities one lacks by seeing those qualities in action—oh, I am so sorry, I've talked too much!" She flushed deeply as Ralph laughed. "You should have stopped me," she said to Doris.

Mrs. Boothroyd smiled benignly. "People's words carry them away, unless they think," she said; "but I like to hear young people's ideas; they're fresh, at any rate," she said in a condoning voice.

At which remark Doris stiffened her neck.

"Rica's words are worth listening to," she said, and Gilbert Raine smiled at her, and took the first opportunity he could find of snubbing Mrs. Boothroyd.

Doris went to the piano and sang; but she was not in good voice; there was something oppressive in Ralph's presence that told even on her singing. The two squires appeared, and her husband came up and spoke to her. Mr. Boothroyd began to talk to Ralph, and, to the young man's extreme annoyance, carried him off to the other end of the room, to question him minutely upon French shooting and French farming. Ralph looked over his shoulder as he followed his tormentor, and he saw Raine take the seat he had left beside Rica.

She looked up shyly as Gilbert placed himself beside her.

"I am ashamed of what I said just now," she said; "I did not mean to preach, but I am afraid it sounded like preaching."

"Of course it did," he said mischievously, "only you forgot to give out the text." Then seeing her disturbed face, "Yes, yes, it was all right," he said abruptly; "but I don't agree with you. I think a man who lives much to himself, or who at any rate moves round in a small circle, gets entirely deadened by self-complacency; he is far too thick-skinned to believe that anything he meets with in a book, especially so trifling a book as a novel, can benefit him; if you were even to describe him to the life, as he appears to you, he would not recognize your portrait."

"I don't agree with you," she said, her eyes growing dark with excitement. "I'm sure you're wrong. People are not so hard-hearted as you think them. It will

sound rude, but I sometimes wonder whether it is yourself that you judge from, for I suppose one gets into the way of judging other people by one's self."

Raine laughed.

"I hard-hearted! I am a perfect sucking dove. Indeed, Miss Masham, I thought you a better judge. I am so tender-hearted that I am constantly imposed on. What can make you think me hard-hearted?"

He laughed, but he looked uneasy and troubled.

"I don't know; you are cleverer than I am, Mr. Raine, and you ought to know better than I do what gives us our first impressions of people."

"But our 'first impressions' are so often wrong. How about 'second thoughts' being best?"

"A great many of those musty old proverbs are wrong. I believe in first everything," said Rica decidedly. "First impressions, first love, first — first — well, the first sight of any beautiful thing; all these are quite different from any that come after. There is no rapture in second impressions or feelings." Then she looked up alarmed again at her own impulsiveness, but Raine's earnest listening, his dark face full of eager interest, reassured her; he sighed, but he did not speak. It seemed strange to Rica that she liked to sit beside him in silence.

"First love," he said presently in a dreamy voice; "ah, I don't know whether that is best. I sometimes think it is not."

"Well then, I do," said Rica; "there can be nothing so delightful. A man who disbelieves in first love must be a thorough sceptic."

Raine started, but he did not answer; looked sadly at Rica, and then his eyes wandered to the fireplace, where he knew Ralph was standing.

There was such a scowl on the lad's face that Raine looked surprised. He got up and went across to him.

"Shall I come to your room to-night for a smoke, old fellow," Gilbert said, "or will you come to mine?"

"I'm going to bed," Ralph muttered sullenly; "and if those cursed people don't take themselves off I shall go at once."

CHAPTER XLIII.

FRIENDSHIP NOT LOVE.

YOUNG people and impatient people are apt to confound rapidity with certain success. In some of their moods of mind

half an hour's delay will suffice, such people think, to destroy the plans of a life; and so they force open the buds of promise and snatch at half-ripened fruit, metaphorically as well as actually. Ralph had watched Rica's face till he could no longer endure what seemed to him her preference for Raine. Certainly she had listened to his own talk at dinner, but then she had laughed and bandied words with him — "chaffed" as it would be called nowadays — but he had not succeeded in getting her to listen with the earnest, half-reverent look she fixed on Raine; nor had she, when talking to him, dropped her eyelids in that lovely pensive fashion till the long dark lashes rested on the glowing cheek.

He was very angry and scornful too. "What could his old dried-up cousin find to say to a lively girl that did not bore her?" He had watched Rica so eagerly, ready at the first sign of weariness to release her from Gilbert's prosing, as in his present mood he called his cousin's talk, and she had only looked more and more interested. He lay awake half the night, tossing and kicking about, and he wakened early next morning with that despondent view of all things with which we are apt to review matters in the grey dawn, and in which we sometimes persuade ourselves that everything will go crooked.

Ralph was much too disturbed to go to sleep again. He rose, and determined before the day was much older he would know the truth about Rica.

"If she prefers to me that crack-brained cousin of mine, a man who doesn't even know how to dress, I shall, of course, have nothing more to say to her. I was a fool to expect any discernment from a friend of Mrs. Burneston's — confound her!"

But as the sun rose higher and poured into his room, and the fresh morning air cooled his hot head, he saw things differently, especially before his looking-glass.

"I'm not at all a bad-looking fellow" — he smiled and showed his white, even teeth — "and beside that brown, shrivelled old Gilbert I'm an Adonis. He's got good eyes, and he's an inch or so taller than I am, but I fancy he has really no chance with a girl if I choose to go in for her. I know he's trying it on with little Rica. I never saw him look at a girl like that before."

He stopped and mused, staring at his own handsome face meanwhile.

"What a fool I am! Why don't I

leave them alone? What on earth do I want with her? What do I want to tie myself by the leg for? I like her—better, perhaps—yes, certainly better than any girl I ever saw. She amuses me awfully, and if Gilbert had kept away we should always have been excellent friends. It's a devil of a shame for him to cut in. But I'm not going to see her snapped up under my eyes. By Jove, I'll just spoil his manoeuvres and make sure of my little girl."

He looked at his watch. Rica was not likely to appear for an hour, and Ralph's impatience grew as the minutes passed slowly away. He went down to the terrace to wait for her, and little Phil spied him from the window.

"Ralphie, Ralphie! I want you. Phil wants you welly-welly much."

Ralph waved his hand, and passed on whistling.

"Bother the brat!" he said. Then as he turned at the end of the terrace he caught a glimpse of the sweet little wistful face gazing down at him. "He's not a bad little chap, though," he said. "I wonder my precious stepmother produced anything so like a Burneston. I should have thought any child of hers must have been born red-haired and high-shouldered, like that terrible old Barugh. I suppose the fellow is not much older than my father, either. Confound Rica, why don't she come?"

Coming down to the terrace from the flower-garden was Slater, the gardener.

"Aye, Maister Ralph," he smiled genially at his young master, "bud yu begins t' day betahmes. Ah expect's it's t' French manners. Ah mahnds 'at yu war a rare yan at lossin' t' mornin' when yu war a lahltle lad."

Ralph had been staring up at Rica's window while Slater spoke.

"Look here, Slater," he said; "give me the key of the conservatory; I want to get a few flowers."

Slater screwed up his eyes, and put his head on one side.

"Floors, Maister Ralph? Ther's floors an' plenty i' t' hoose, an' if theer's mair needed ah'll gi' 'em. Nae need fer yu ta gan for 'em yersel'."

"Yes, yes, I want some special ones," Ralph spoke emphatically; "let's have the key. I know the door is locked; don't you trouble your head about it; I'll get my own flowers."

Slater looked hard at him with one eye screwed up, but he did not attempt further remonstrance. Not one of the servants ever attempted to question Ralph's will;

he had reigned absolutely among them ever since his babyhood. But still Slater prized his choice flowers.

"Ye'll mebbe nut be wantin' monny on 'em," he said deprecatingly, as he handed him the key.

"All right."

The gardener screwed up both his pale blue eyes as he stared after the young man, till they were almost hidden under his red eyebrows.

"Woonkers!" he said, "that's t' fost tahme 'at ivver Maister Ralph hes aks'd mey fer floors. I' t' neame uv Awd Soss, what can he be oop tiv' noo? Theer mun be a lass if he wants floors, an' it's nobbut a week sin' Sukey Swaddles seyed 'at t' yung squire waaz litten an' latten efter Rase Duncombe. Weel, mebbe he thinks yan bird i' t' hand is woth twae i' t' bush: eh, eh, I kens hoo t' wind sits, an' he's rich, an' this lass is as bonny as Rase is, an' sheea's a laady. Ah dizzent lahke tu see t' quality laendering aboot wiv sike as wursels."

He made a sudden wry face, and put his hand over his mouth.

"Zookerins! Ah mun tak' tent o' what ah sehs. Ah forgits t' squire an' t' missis. Nobbut theer's nae sayin' 'at t' Barughs waaz sike as wursels; mebbe t' farmer waaz, bud t' missis mun ha' been a born laady."

He turned away, muttering to himself, "A born laady." Just as he disappeared on his way to the fruit-garden, he murmured, "Nobbut, sheea's ower fond o' meddlin' wiv t' floer-beds. We's yalways at odds ower 'em."

Ralph came back with some exquisite flowers, and sat down under the cedar-tree to arrange them; but it was a new experiment and he was not skilful, and as he changed the delicate blossoms impatiently from hand to hand the ground at his feet was soon strewn with bright geranium petals.

"Confound it!" he said.

A merry peal of laughter answered him.

"Those poor flowers are not used to be so roughly handled," said Rica mischievously, as she picked up a lovely spray of begonia and gave it to him.

Ralph bit his lips, and made one more effort to group his flowers effectively.

"There, I can't do it any better," he said; "but it's your fault, if you had not come and startled me it would have been first-rate; but you will have the flowers any way, if"—his tone grew graver—"you will make me happy by accepting them."

Rica took the flowers. "Thank you so very much. I love flowers, and I hardly ever get rare ones. There is a special charm to me about wild flowers, and also about these sheltered ones which never breathe outside air — there is just the difference between these and ordinary garden flowers that one finds in people."

Ralph felt inclined to gape; he wished Rica would not take such flights in her talk, and give him the trouble of thinking. "She's too pretty for it; pretty women shouldn't do it," he said, looking at her as she bent over the flowers. "I hate to have to think while I'm looking at a pretty girl;" he pulled his soft beard, and looked and smiled mischievously at Rica.

"I don't quite understand," he said aloud, more for the sake of making her raise her eyes, than because he cared to know what she meant.

As he expected, she looked up, her great grey eyes luminous.

"Well, as a rule, unless we live quite in open country, we see far more ordinary garden flowers than either delicate wild flowers or greenhouse plants. I don't mean buttercups and daisies, and so on, though they are full of beauty. It is just the same with people; for one rare or refined and cultivated person, you see fifty who are educated, perhaps sensible and comfortable in their ideas; but oh, how alike, and how commonplace! — people with whom you can talk by the hour — just surface conversation, like a cat purring — if you are self-controlled. I put that in, because of — dear me, I beg your pardon, I bore you, I'm sure," she broke off abruptly and looked ashamed.

"You needn't mind me," Ralph was secretly getting impatient lest the prayer-bell should ring before he had spoken. "I like to hear you talk, you know, you're so amusing. But I see what you mean, Mr. and Mrs. Boothroyd are purrers. Yes, I know they are a commonplace pair, according to your ideas; but then they're rich and thought a good deal of, and a woman must be like other women; it don't do for her to be eccentric, you know."

"Oh, you would like us all one pattern, like a wall-paper, would you? I hardly see then what would become of likes and dislikes."

"I don't mean that at all," he said abruptly; "you are quite unlike any one I ever saw, and I like you better than any one."

Her eyes opened widely, but her color did not deepen.

"You're very kind; must I make you

a curtsy?" Then she said gravely, "Thank you for your good opinion. I should think you often want a sister, don't you? My brothers say they don't know what they should do without a sister."

Between his teeth Ralph cursed all sisters.

"No," he said impetuously, "I don't want a sister, but I do want some one to care for me and think of me — I want you, Rica. Don't you understand?"

Still she did not understand. She thought he was in some sudden trouble which he could not tell his father of, and a sympathy for his loneliness shone in her eyes as she looked in his face, flushed just now with unusual earnestness.

"I am listening," she said sweetly; "what is your trouble? I should like to help you if I can."

"You can if you choose," he said. "Say you like me as much as I like you, and it will be all I want."

She raised her eyes to his in sudden doubt, and then she saw his meaning. While he spoke he had drawn nearer, bending almost over her. His ardent glance brought a burning flush to her face, and instinctively she drew away from him. He thought she was only shy.

"I love you, dearest Rica," he said, "and you love me too, don't you — don't you?" He tried to take her hand, but she drew it away and rose up from the bench beneath the cedar-tree.

"Oh, please don't, Mr. Burneston. I don't know what to say to you."

But her shyness only spurred Ralph's eagerness.

"You are surprised; I've been in a hurry, perhaps," he said; "but you do see how much I care for you — and I'm sure you love me, Rica, though you don't know it, you dear girl."

He certainly was not shy, he took her hand and held it while she stood confounded, wondering how she could make him leave her without being rude.

"I am very sorry," she began, "you are quite mistaken, Mr. Burneston."

But her fear of giving pain made her confused and deceived Ralph.

"No, oh no," he said fondly, "I am not mistaken. I love you with all my heart and soul." He pressed her hand tightly, but Rica drew it suddenly away; his last words had brought back her courage.

"I am still very sorry. I like you very much as a friend; but that is all. I could never think of anything else."

Every word made Ralph more determined.

"Tell me," he said, "have you ever been in love?"

"No." Rica was carried away for a moment by his eager tone; then she flushed suddenly. "And if I had, I scarcely think you ought to ask me."

"My love gives me the right;" but he spoke less confidently. "If love is new to you, you may love me without knowing it. Trust me, it will be all right."

She did not turn away or look confused now, and Ralph felt deeply mortified. His assurance vexed Rica, and took away from her fear of wounding him.

"It is better to be quite plain with you," she said. "I think I am so much older than you that such a thought could not come to me; and listen, please"—for Ralph turned angrily away—"I think, too, that you mistake your own feelings. I had got to consider you as a new brother."

A smothered oath burst from Ralph, and she drew back, fear and disgust showing plainly in her face.

"You had better say you can't bear the sight of me, and be honest at once. I suppose you think that I don't see through all these shams. Just take care of yourself, that's all. Just see that long-tongued cousin of mine doesn't lead you on as you've led me, and leave you in the lurch—and it will serve you right—you've used me shamefully!"

He went away at once, while Rica stood looking after him, all her senses dazed by his words.

CHAPTER XLIV.

THE RISING OF THE STORM.

RALPH hurried away to the house in mad anger—for the anger of a vain man wounded in his supremest vanity is a sort of insanity—he had resolved that Rica should care for him, and that she should confess him irresistible, and he had never doubted his power till he saw her listening to his cousin, and even then the notion that Gilbert could prove a successful rival had seemed too absurd. Instead of confessing love she had pitied him. His eyes blazed with angry light, his face was red with passion, and he carried his hands tightly clenched on each side of him as he met Faith Emmett at the foot of the great staircase.

The sight of her boy always brought a rare sweetness to the housekeeper's lips—her eyes opened widely without any of the yellow light that sometimes flashed between their dark lashes; but at the sight

of his troubled face Faith's smile vanished, her forehead wrinkled, and her eyelids drooped.

"What ails ye, mah bairn?" she said, and she laid her brown hand on his arm.

He shook her off angrily.

"Confound you! don't stop me. Can't you see I'm in a hurry?" He pushed past her, and went on up the stairs and along the gallery.

But Faith was not disturbed by his rudeness, she knew her power over him. She followed quickly, and when she too reached the gallery—"Whisht, whisht, mah lad," she said softly, "ye've been crossed, an' mebbe if ye comes along wiv me ye'll find t' reason why. Come, mah honey, ye'll nut be going in to breakfast yonder; ye can have all ye wishes for in t' housekeeper's room."

Ralph shook his head, but his manner was irresolute.

"I don't want breakfast. I want to be left quiet."

Faith turned, looked at him resolutely over her shoulder, and said, "Come," and he followed her down-stairs.

The housekeeper's breakfast was on the table untouched. She had been far too deeply interested in watching Ralph's interview with Rica, and then in trying to know the rights of her darling's discomfiture, to think about eating, though she had a great liking for dainty dishes. "Yey'll be quiet in here, honey." She opened the door of her den, saw Ralph fling himself into a huge armchair, and then bustled off to the still-room in search of some hot coffee and toast for her darling.

When she came back with a tray laden with a fragrant and appetizing breakfast she looked still graver, for Ralph, instead of having attacked, as she expected he would, the cold partridge on the table, sat scowling in the easy-chair, looking far more ready for a fray than a feast.

"Come and take some breakfast, honey," said Faith; "there's cream cakes and kidneys, and an omelette I made o' purpose—ye sud niver fast on trouble, Master Ralph."

Ralph looked round at the table, but he refused to be tempted.

"Give me a cup of coffee and a bit of bread," he said, "and if you've got anything to tell me, for heaven's sake tell it and have done with it, instead of winking and pursing up your lips and making an old fool of yourself."

Faith winced, but she did not look angry. She shook her head sorrowfully at Ralph.

"Eh, eh, it's been allays t' same fra yur cradle upwards; you spiles all by wantin' it ower soon. How could ye think, honey, to ask a lass her mind afore she'd broke her fast? an' mebbe if ye'd left her a week or mair she'd have smiled on ye."

"Do mind your own business," Ralph broke in furiously, stamping his foot. "Say what you have to tell me and have done with it—that is," he rose and moved towards the door, "if you have anything to tell. I don't want to be jawed as if I was six."

Faith's hands clasped themselves tightly together. She had that wonderful power of forbearance so often linked with a strong, passionate nature. Ralph never guessed how deeply she felt his taunts.

"Master Ralph," she began in a deprecating voice, "many's t' time I've told ye that Mrs. Burneston 'ud do you a bad turn, an' see, for all your scaum, she's done it now."

"What has she done? Make haste." He stamped on the floor in his impatience.

"Sit ye doon an' I'll tell ye. Nobbut you are ower good for t' likes o' a poor parson's lass."

He frowned angrily.

"You're talking nonsense, Faith, and you know it; if I want anything, it doesn't matter whether it's good enough for me, I must have it; and I should have thought," a slight flush spread over his face, "that you would prefer Miss Masham to Rose Duncombe."

"Rose!" Faith tossed her head, and the corners of her mouth went down into her chin; "it cud nivver be seemly fer you to speak with such as Rose, nobbut in the way of kindness. But, Master Ralph, you sud look higher than Miss Masham; you may wed with a duke's daughter fer t' asking."

"I shall wed, as you call it, whom I please;" then he flushed angrily at the remembrance of Rica's refusal. "But never mind all this; what has Mrs. Burneston done? say it and do be quick."

"I sud ha' thowt you might have guessed; it's clear as daylight—mickle wad hae muckle, an' mickle wad hae mair; t' mistress has gotten mickle, but what's that sae long as her foalks is nut t' same as hersel. Hes not Miss Masham telled ye that she visits at t' Cairn, takes up wiv such as t' Barughs? Nae, nae, Master Ralph, Mrs. Burneston's fain t' wed her friend wiv her brother, an' she'd do it twice as much noo just for to spite you."

Ralph stood still; he leant against the

wall thinking and frowning, but at last a smile spread over his face.

"Do you know, Faith, you think you're deuced clever, but you're an extremely foolish old woman? To begin with: such a thing as an attachment between Miss Masham and that lout George Barugh is impossible; and next, how can Mrs. Burneston know anything about me and Rica?"

"Eh, lad, if ye'd allays keep a smile on your bonny face like that, ye looks my ain bairn 'at seemed gone away, an' Satan's hoof 'at had just dinted yer forehead is smoothed out 'o sight now. Eh, lad," she went up to him and laid her hand pleadingly on his shoulder, "I'm not blamin' yu, honey." The soft tenderness that had made her eyes dark and liquid changed into sudden hate. "It's not yur fault if ye're changed, it's she 'at has driven ye fra yur ain home into wicked ways, an' noo that she sees a chance o' your comin' round she tries to step atween you an' ivvery pleasure yey fancy."

The last words renewed Ralph's anger. His resentment against Doris had slumbered in the amusement afforded by his pursuit of Rica, but there came back suddenly his meeting with his stepmother outside the stone cottage, and also Rose's sudden removal from Burneston.

"Curse her!" he said fiercely; "yes, you're right, Faith, there must be an end to this at once;" then as the thought came, "By Jove, she has set Rica against me."

Faith nodded her head eagerly. This was just the mood she had been striving to evoke, and yet, knowing her boy's contradiction, she had begun to feel hopeless of success.

"What did I say to ye; an' did yey mind, when yu an' t' lass were talking beside t' river? I was takin' tent on ye, an' sae was Mrs. Burneston. I saw miss turn her head to t' house, an' I looks, an' theer was t' mistress a' frownin' an' a beckonin', an' I kenned 'at she was oop to keepin' her fra you. When I knows a thing, Master Ralph, I knows it, an' I reads Mrs. Burneston like a book, for a' t' scaum in her face; she hates you an' she hates me, an' she'll nivver rest till she sees our backs turned on t' Hall."

There was real passion in Faith's voice, but there was not the fierce glance and violent manner she often used to overawe her inferiors. She looked calm and very pale, but her hand trembled as it rested on Ralph's arm.

He stood a moment musing.

"Look here," he said sternly; "I've been wrong all this time. I've never asserted myself, and she thinks she can override me as she pleases. I have taken her insolence too quietly; but we'll see who's master here. My father"—he hesitated, a lingering touch of right feeling reminding him that he had a listener; then the remembrance of Rica's refusal came back with the new aspect of being caused by Doris, and he forgot all restraint.

"The low-born, presuming upstart!" he said; "she to dare to judge and control my conduct—she! Does she think I'm as great a fool as my father, I wonder? If I'd been older when he was duped into that marriage, I should have been justified in shutting him up. He lost his senses, and they've never come back."

By this time Faith had seen the danger of going too far.

"Whisht, whisht, you mustn't blame 't squire, dear," she spoke soothingly, "he's nowt to do with such ways. I heard him tell Mrs. Burneston 'at Miss Masham were not for 't likes o' her brother George."

Ralph stared in utter surprise. Till now he had looked on Faith's assertion about George and Rica as a mere effort of imagination. It was too daring for Doris to dream of such a project.

"You heard!—how?"

"I was in Master Phil's room, and they war speaking out."

"And you listened?" he sneered, and Faith reddened. "Well, of course, that explains everything, and also explains what happened this morning. Well, I'm off."

He nodded and left the room, eager to find Rica. Of course she cared nothing for George Barugh, but he was sure now that she had been prejudiced against him. If his stepmother were determined to marry Miss Masham to her brother George, Doris, he thought, would stick at nothing. If Rica knew how Doris had upset his whole life he was quite sure she would not be guided by her. "After all, Rica's a lady," he said, "and she must have some class prejudice; it is far more natural she should side with me than with a farmer's daughter. They must have finished breakfast by now."

CHAPTER XLIV.

GEORGE'S QUEST.

WHEN George left his sister he rode away slowly up the avenue; he had no heart to go through the village or to pass

by the farm and Rose Duncombe's cottage, and, as has been said, the road through the avenue curved round into the Steersley road above the church. As he passed the churchyard gate so many memories crowded over George that he gave his horse the whip, and galloped on till Burneston was fairly left behind him.

"Mother says it hes been a grand thing for Doris to have married 't squire," he said sadly. "but I can't see it. She's not taken happiness to 't Hall, an' she looks worried an' sore-hearted; except when I spoke of 't little lad she scarce smiled. Mebbe it's true that happiness is not so unequal as fooalks says. Mother's niver tasted the sort o' pleasures that Doris lives among, but, for all that, mother's younger and fresher in spirit than Doris'll ivver be now; it must be sad to hate, as I fear she hates Ralph Burneston, her own husband's son, too."

He sighed at this. He had spoken positively about Rose to Doris, but he felt that marriage was over for him, for it seemed as if his love for Rose had grown hopeless. He knew he could never love any other girl, and, therefore, however despairing her attachment might be to Ralph Burneston, he thought it must like his own surely prove undying. But he was not sighing now for himself or for Rose Duncombe; he was only thinking how completely the practical experience offered by life contradicts the theories of youth and hope. The squire's love for Doris had seemed perfect, and although hers had not equalled it, still George had hoped that her husband's great love would have sufficed for his sister's happiness, would, at least, have drawn her love forth in return.

"But she cannot truly love her husband," he thought sadly; "her own self an' little Phil comes first, an' 't squire last of all. 'Twas plain to me whiles I talked to Mr. Burneston how he loves 't lad; tho' he sees Ralph's been to blame, yet he longs to keep him at home; an' how can Doris set herself against him? I don't like him, but then he's not 't flesh and blood of one that's dear to me. I'm very sorry for him. I thowt Doris 'd be so large-minded, so different to most stepmothers. I'm sadly feared 'tis her pride; she'd like 't set him aside fer 't sake o' her own bairn."

His thoughts went on to Ralph and Rica, and he felt a tender pity lest the girl should fix her affections on such a changeable, unstable character as Ralph Burneston's.

"She's worth better than he, nobbut she

may steady him an' lead him up to higher things. Aye, there 'tis, I kened I'd stumble on't at last. There 'tis—it's at the root of Doris' troubles. She tries t' deal wi' 'em herself. She don't cast 'em on Him that careth for her. Why, if she did she'd rise up fresh and bright, instead of having her young face clouded and grave."

So much thought and sympathy for others had put his own trial aside; but as he drew near to the parsonage at Steersley his trouble came back, and he felt heavy-hearted again.

"Well," he smiled, "I'm not practising my own doctrine; I munnot trust to myself; I mun do what Mr. Hawnby says is best fer t' poor lass."

His mind turned slowly from one idea to another, and he had been so bent on finding Rose at Burneston, that at first he had scarcely entertained the squire's idea that she would be found at Steersley; but when he came in sight of the low grey house a sudden glow of hope warmed his heart. Something told him that Rose was near at hand.

The parsonage stood some way back from the road, screened very much from sight by clumps of Portugal laurel, the garden itself being divided from the highway by a low wooden park paling, grey with the lovely opal tints of time, which had covered much of it with hoary lichen. Behind the house, far away, was the open country; to the right of the parsonage were tall trees, and from these came the peaceful sound of rooks, as the huge black birds sailed solemnly forth from their nests to take their evening gossip overhead.

The grey wooden palings were continued up each side of the grounds to the low stone wall which shut in the back yard and out-buildings. George rode round to the back gate, and as he looked over the palings through the alley of apple-trees, which bordered this side of the garden, he saw a sight which brought the blood to his cheeks and made his pulses quiver. Surely it was Rose who was pacing up and down this sequestered alley quite out of sight, as she thought, for only a tall man on horseback could have seen over the fence into the walk below. She was unconscious of his presence; she walked past him down the alley, her hands clasped together, and it seemed to George in his hurried glance at her, with a sad, stricken look on her face.

He rode on fast, opened the gate for himself, and had put his horse under a shed, before the parson's lad, an old, de-

crepit man with a hump on his back, found out there was some one in the yard.

George nodded, and asked if the parson was at home.

The old man shook his head. "Nae, nae, mah lad, an' he'll nut com yam mebbe till night. There's a awd lass atween life an' death mebbe three miles aff, an' ye'll not fine t' parson leavin' till his wark's done ov her. Fooalks tell 'at she's been a witch, an' t' awd deevil's feersome noo sheea's deein', she cries out on Awd Soss, an' says he's waitin' fer her soul."

"Poor old creature!" Then George hesitated. "I'll go in an' wait a while," he said, "I want t' speak wi' t' parson."

Bill stared after him.

"Parson he sehd ah war nut tu let onnybody gan in, but yon lad's sae maisterful. Weel, weel, ah'v telled him nowt, an' if t' lass keeps weel oot o' sight, mebbe he'll nut get a sight o' her."

George went rapidly past the house, he scarcely felt his lameness now, the moorland air had so invigorated him. He was anxious to escape the observation of Mr. Hawnby's housekeeper. Fortunately he met Rose at the near end of the apple-tree walk; his fear had been that she would escape at the first glimpse of him.

She looked stupefied as she saw him coming towards her; then, as he held out his hand, she tried to turn away; but it was too late. George caught first one hand and then the other, and held her fast.

"Whisht, lass!" He saw the bright color fly into her face, and he feared a sudden gust of passion. "Nobbut ye'll stand still, I'll loose ye soon enough. Rose, honey, I'se so fain to see ye safe, 'at I's no mind to flout ye fer t' fright ye gave me yon. Tell me, lass"—he loosed one hand; but, spite of her twitching fingers, he kept the other firmly grasped—"what's ye doin' here?"

"I don't know." She looked sullen, and there was such despair in her voice that his heart ached for her.

"I mean, how did you get here, lass?"

He spoke in a soothing voice as he gazed at the girl; her scared, wan look, the hopeless misery in her face, wrung his heart. He saw, as he took in every bit of her tired, drooping figure, that she wore the same gown she had worn that fatal day on the moor; it was soiled and draggled, and George's heart was full of fear as he waited for her answer.

Rose gave him a hasty look; then she turned her head away.

"On my legs, foolish lad; how else d'ye think?" She gave a short laugh.

"My poor lass, d'ye mean," he said tenderly, "at you walked all the way from t' Cairn to Steersley?"

There was the old scornful light in her eyes as she turned round and looked in his face.

"My mercy! you're not changed, lad; ye're as fond as iver ye was, nae doubt. I walked a' t' way from t' Cairn; easy walking for such as me," she said bitterly. Then she saw tears in his loving brown eyes, and turned away.

"I'll not freet ye, lass," he said. "I'm onny thankful to find you here safe, an' in such good keeping. T' parson's reeght good, Rose."

"Yes, he's very kind." She spoke carelessly and stopped for a while; then, finding George did not break the silence, she resumed her walk under the apple-trees.

He paced silently beside her. Presently he saw first one tree and then another fall and leave its trace on the bosom of her travel-stained gown. She did not sob or sigh; the tears started to his own eyes, and he dared not speak; his love was too reverent in its nature to force itself on her sorrow. At last she spoke without looking at him.

"Ye're a kind, good lad, an' may ye nivver know t' bitterness of such a lot as mine. D'ye mind, lad, how ye read to me yance o' t' Slough o' Despond an' t' pilgrims flounderin' and strugglin' i' t' mire an' foul water, till they couldn't sae much as see t' land on t' other side? Well, lad, ah was gone further still; ah left strugglin' an' flounderin'. Ah was just sinking." She looked up sharply; the intense pity in his face irritated her, and roused the old defiant spirit. "An' why not, ah'd like to know? No one wad be a bogle t' warse if ah had sunk an' gone out o' mind foriver."

"Rose, Rose! whisht, honey! Ah tells ye ye munnot speak untruths; ye kens there was more than yan 'at wad ha' gone sorrowin' fer yu their lives long."

"More than yan! Ah likes that, ah diz." She laughed harshly, and George winced. "More than yan means two at t' outside, an' that's yersel an' mebbe gran'-mother. Yance ah'd hev made a bigger hole i' life when ah left it, but now"—she looked round wildly, then the sight of the house seemed to recall her straying wits. "God help me!" she said, "ah've laughed at yu, George, fer yur sermons, but ah's learned to trust i' God sin he

helped me on t' moor, an' ah knows he'll have pity on such a wretched thing as a girl which loves a man wivout a heart in his body."

She dried her eyes and kept walking on beside her companion, but George did not speak. His lips moved as he prayed fervently for help and guidance, both for himself and for poor Rose, but he could not find anything to say. He feared to comfort her; if he tried it would most likely set her contradiction in a blaze; for he saw that she was in too overwrought a mood to endure any topic disconnected with her present trouble. He was conscious of some change in Rose. Formerly he had thought that only his exceeding love for her made him sometimes distrustful of his power to convince her, but now there was a dignity in her despair of self that kept him hushed. He felt that the nature he thought he knew so thoroughly had secrets beyond his ken.

All at once she began to speak again, in a quiet, calm voice, and looking straight before her, so as to avoid George's eyes.

"Thank you, lad, for all your kindness. Ah knows more then you thinks. You came here last night, an' t' rector was away, an' t' housekeeper'd been told t' haud her tongue, an' so ye went on to t' inn tired an' worn out. If ye'd not started sae early t' mornin' fer Burneston ye'd hev kenned t' truth; but ye'd flitted be time t' rector got to t' Black Eagle."

"But how came they not t' say a word at t' inn? They must know you're here."

Rose shook her head. "Not they. Ah was miles from Steersley when Mr. Hawnbys saw me fost. Ah cannot tell ye how ah'd gotten so far. Ah got lifts in carts; an' yance a lady—she mun be good, whoever she be—took me on a bit in her carriage. It was night-time, an' she was going post-haste to see a dyin' daughter. Ah telled her ah would fain die, so as her daughter might live, life was nowt to me, ah said; and she cried, poor soul, an' patted me on t' shoulder, and sehd ah was to live for t' sake o' Him who died that ah might live—not for myself. 'Tis strange how t' words spoken in darkness sank into mah heart. Ah could scarce make out her face in t' glimmer, but ah knew it must be sweet; her words had a teary sound, but they warmed me as a smile wad ha' done. Ah, she war good. Mebbe if ah'd not travelled along wiv her, ah'd not have come away so quiet wiv t' parson."

"Where did you meet him?"

He saw at once he had better have kept silence. The interruption to her flow of

recollections jarred the nerves of the unhappy girl. She tossed her head and gave George a derisive smile.

"Just t' same — same as ivver — poor doited lad!"

But as she found that he kept silence, the longing to tell her story to the end grew too strong to resist. She looked straight before her again and went on.

"T' lady made me stay wiv her till t' daylight came; but then ah would go. She urged me to go on wiv her to her journey's end, but no, that was not fer t' likes o' me; 't was enough for me to see t' fine lady's maid, as soon as 't was light, toss her head at me. T' lady said t' next town was Steersley, so ah said ah'd friends in a village near, an' she was too kind t' ask questions. Then t' parson found me sitting under a hedge. Ah was faint an' weary — t' lady gave me biscuits, but ah'd no heart to eat — an' he bid me get up beside him, an' he took me to an awd lass in a cottage near an' left me all day; an' i' t' evenin', when ah lay sleepin' on t' bed, he came an' fetched me here."

"Thank God!" said George involuntarily.

Rose gave him a smile, but it made her face look old and dreary; it was but the ghost of the saucy, happy smiles that used to be a part of her beauty. It faded into a look of deep sadness.

"Fare ye well, lad," she said gravely; "go back to your ain foalks, an' nivver trouble more about Rose Duncombe; she's not worthy for yu to think on. Ah didn't say, forget me. Ah'd like to feel ah had yun true friend to count on; but ye mun change yur way o' thinkin'. Ye mun always mind ah's not t' Rose 'at ye loved yance, but a misguided lass that hes cast herself away. Yur words hes come truer than ye thowt for; George, lad, ah hev ventured too near the flame, an' my wings is singed forivver more" — her voice broke into a sob.

She waved her hand quickly, and darted from him as suddenly as she had left him at the Cairn.

With her went the weight which kept down his power of thinking, and a flood of questions rose to his lips which the very sight of her woeful face, and the hearing of her sad story, had for the time stifled. He looked wistfully up the apple walk, and then shook his head.

"It's mah ain fault, ah'm unready," he said, "but 'tis impish to me, an' it's useless to repine against one's ownself for aught beside sin — it's no sin, Mr. Hawnbys says, to be unready and awkward-like, so long

as it don't come from being ower full o' wersels, an' only God knows," he said reverently, "how truly ah was taken up wi' t' poor lass. Well, it would be selfish to cross her will, an' ah'll not seek her for this time. Maybe he'll order it different one day."

It was getting too late to return to the Cairn, and he so longed to see the rector that he resolved to sleep at the Steersley inn. As he led out his horse, Mr. Hawnbys came hurriedly out of the parsonage. He looked much pleased to see George.

"I'm glad I've met you, my lad. You will find a letter from me when you reach home," he said. "I met Rose as she left you just now. Poor child, she is not fit to talk yet; you must leave her alone. She will not take comfort from you in her present state."

"What is to become of her, sir? It's past bearing —"

The rector put his hand kindly on George's shoulder.

"Come, come, this is not like you; I thought you would be quite cheered to find she was safe. Leave her alone with me. I am seeking a quiet home for her, for Mr. Burneston will of course agree with me that she cannot return to her grandmother. When she is more like herself I will write and tell you, but depend upon it she is far better among strangers just now. Now I shall send you away, and you had better not try to see Rose again for some time to come."

"You are very good, sir, I've no words to thank you," but George looked sadly downcast.

"Cheer up, my lad," the rector said. "Time is a wonderful healer, and you are both very young, you know, so be hopeful. Now good-bye. God bless you."

He squeezed the lad's hand warmly. "Poor lad," he said, as he watched him trot out of the yard. "He will win her yet, I hope; he deserves to, and she'll come right in time."

From The Contemporary Review.

ON THE HYGIENIC VALUE OF PLANTS IN ROOMS AND THE OPEN AIR.

THE animal kingdom is, as we know, dependent on the vegetable kingdom, which must have existed on the earth before men and animals could live upon it. We may therefore rightly call plants children of the earth. But in so doing we use the language of metaphor, as when we

speak of "mother earth." The earth does not directly bring forth either plants or animals. Every plant is the child of a mother plant, descends from one of its own kind like ourselves; but plants derive their nourishment directly from earth, air, and water, and, although generated by plants, are nourished directly by the inorganic breasts of nature, and imply no other organic life but their own. Had plants a voice, they would more correctly speak of "mother earth" than ourselves.

Plants live directly on the lifeless products of earth, and we live directly on the products of plants or on animals which live on them; our existence implies other organic life, and our nourishment is not derived so directly from the earth as that of plants. Since the vegetable world comes between us, we should rather call earth our grandmother than our mother. At all events it is an affectionate relationship.

We have a natural feeling of close affinity with the vegetable world, which expresses itself not only in our love of foliage and flowers, but in our fondness for metaphors derived from the vegetable world and its processes. If we were to reckon up how many metaphors in everyday life and in poetry are derived from the vegetable world, and how many from other spheres of nature, we should find a great excess of the former.

Our material relations to plants are also very numerous. The question we are now concerned with is not what food or what medicinal remedies plants provide us with, but the value of plants and plantations in dwellings and in the open air in conducting to health or preventing disease. We have given the subject very little consideration until quite recently, just as we have thought very little of the way in which the pleasures of the table, fine raiment, comfortable dwellings, and many other things, conduce to our well-being. Meanwhile we have been guided by our instincts, which, like nature in general, have, on the whole, guided us rightly. Even now there is not much scientific knowledge on the subject; still there is a little, and something is gained when we begin seriously to reflect on anything, for knowledge is sure then to increase. All that man has ever aspired to and attained, has always existed much earlier in idea than in reality. Ideas are never fully realized, as we all know, and it is only very gradually that they are realized at all.

It is generally asserted that vegetation purifies the air, and chiefly by three func-

tions: firstly, because plants absorb carbonic acid; secondly, because under the influence of sunlight they exhale an equivalent in oxygen; and lastly, because they produce ozone. These facts I need not demonstrate, as they have been placed beyond doubt by vegetable physiologists, chemists, and meteorologists. My task is to show what the direct sanitary effect of these three functions is.

I must at once state that none whatever can be proved to exist. And as this assertion will contradict the prepossessions of many readers, I feel bound to prove my proposition.

As to carbonic acid, the first question is, what is the proper and normal proportion of this gas in the air, next how much more carbonic acid is contained in air which is notoriously bad, and, lastly, whether the air on a surface without vegetation contains essentially more carbonic acid than one having vegetation upon it.

The amount of carbonic acid in the open air has been often determined, and is confined within very narrow limits. It may be said—leaving severe storms or very thick fogs out of the question—to vary between three and four parts in each ten thousand of the volume of the air.

Experiments have also been made on the quantity of carbonic acid in apartments occupied by man, and it is generally taken as the criterion of the quality of the air, ventilation being regulated by it. In very bad air which is undoubtedly deleterious, it has been found to amount to from three to five per mille. One per mille marks the boundary line between good and bad air in a room.

We next inquire whether the atmosphere over a vast tract of country destitute of vegetation contains more carbonic acid than one abounding in vegetation, whether in the former case the amount of carbonic acid approaches one per mille. In 1830, De Saussure began to make researches into the variations in the quantity of carbonic acid in Geneva, and they were continued about ten years later by Verver in Holland, and Boussingault in Paris; in more recent, and very recent times, a great number of experiments have been made on the subject by Roscoe in Manchester, Schufze at Rostock, and myself and my pupils, particularly Dr. Wolffhügel, at Munich. The result is, in the main, that the variations—very small from the first—have been found to be still smaller as the methods of determining carbonic acid have been perfected.

Saussure, who worked by a method

liable to give an excess, found from 3·7 to 6·2 parts in ten thousand. He considered that there were also slight variations between summer and winter, day and night, town and country, land and sea, mountains and valleys, which might be ascribed to vegetation. Boussingault, however, found the carbonic acid in the air to be rather less, and the same on an average in Paris and St Cloud; in Paris 4·13 and at St. Cloud 4·14 in ten thousand, which surprised him the more as he had reckoned that in Paris at least 2,944,000,000 litres of carbonic acid were exhaled by men, animals, and fuel.

Roscoe made experiments on the air at a station in the middle of Manchester, and at two stations in the country. He was originally of opinion that the vast manufactures of Manchester, chiefly dependent on the consumption of coal, must produce a perceptible effect on the carbonic acid in the air; but he also discovered that the air in the space in front of Owen's College contained no more than the air at the country stations. He also observed occasional variations; but when the carbonic acid increased or diminished in the city, it was generally just the same in the country. Roscoe found the greatest amount of carbonic acid in the air during one of the thick fogs prevalent in England.

Schulze found the amount of carbonic acid in the air at Rostock to be between two and a half and four parts in ten thousand. On an average it was somewhat higher when the wind blew off shore than off the sea.

In Munich, Wolffhügel found the carbonic acid to be between three and four parts in ten thousand. Now and then, but very seldom, he observed variations, the maximum being 6·9 parts in ten thousand in a very thick fog, the minimum 1·5 parts in a heavy snow-storm, when the mercury was very low in the barometer.

It may be asked how the immense production of carbonic acid in cities like Paris or Manchester can thus vanish in the air. The answer is very simple: by rarefaction in the currents of the atmosphere. We are apt not to take this factor into account, but think rather of the air as stagnant. The average velocity of the air with us is three metres per second, and even in apparently absolute calm it is more than half a metre. If we therefore assume a column of air one hundred feet high and of average velocity, it may be reckoned that the carbonic acid from all the lungs and chimneys of Paris or Manchester is not sufficient to increase its

amount so as to be detected by our methods.

From this fact it may be logically concluded that if no increase in the carbonic acid in the air is observable, no diminution will be observable from vegetation.

It is a universally recognized and incontrovertible fact that the carbonic acid contained in all the vegetable life on earth is derived from the carbonic acid in the air, in water, and the soil. Many conclude, therefore, that the air in a green wood must contain less carbonic acid than that in a city or that of an extensive tract of waste land. But I can assure them that the air in the Sahara, so called, of Munich, formerly called the Dultplatz, contains no more carbonic acid than the neighboring Eschen grounds. Of this I can give incontestible proof, an argument *ad hominem*. Dr. Zittel brought me several specimens of air in hermetically sealed glass tubes, from his travels in the Libyan desert, from sandy wastes, and from oases, on which I could conveniently make experiments at Munich. The amount of carbonic acid does not differ in the least in the air from the barren waste and the greenest oasis. The case is just the same with the amount of oxygen in the air. It was formerly thought, when imperfect methods were employed, that perceptible variations could be proved. Thus, for example, the outbreak of cholera in 1831 was attributed to a diminution of oxygen in the air, and here and there experiments were made which seemed to confirm the opinion. The hypothesis did not seem improbable, for it was concluded with certainty that in tropical swamps, which are the home of cholera, the oxygen in the air might have been in course of time diminished by the vast masses of decaying matter. But since the method of gas analysis has been arranged by Von Bunsen, the amount of oxygen in the air on the summit of Mont Blanc has not been found to differ from that in a city or in the swamps of Bengal. Neither is it greater in forest or sea air than in the air of the desert.

This absence of demonstrable variation, in spite of the production of oxygen by living plants and the absorption of it by the processes of combustion and decay, becomes intelligible when we consider first the mobility, and then the mass of the air encompassing our earth. The weight of this mass is, as the barometer tells us, equal to that of a layer of mercury which would cover the surface of the earth to the depth of seven hundred and sixty millimetres (more than three-quarters of a

metre). From the weight of this, several billion kilos, some idea can be formed of the volume of the air, when we consider that air, even beneath a pressure of seven hundred and sixty millimetres of mercury is yet 10,395 times lighter than mercury. In masses like these, variations such as those we speak of go for nothing. The amount of carbonic acid and oxygen might perhaps be essentially changed in Paris or Manchester if all organic matter on and in the earth were burning at once.

Even if it is granted, however, in face of these incontrovertible facts, that vegetation exercises no perceptible influence upon the composition of the atmosphere in the open air, many persons will not be disposed to give up the idea that the air in rooms can be improved by plants, because, as is well known, every green leaf absorbs carbonic acid and gives out oxygen under the influence of light. This idea may seem the more justifiable, because, although the production of carbonic acid is not perceptible in the greatest assemblages of human beings in the open air, it is always observed in confined spaces, although the actual production is but small. In the air of a closed apartment, every person and every light-burning makes a perceptible difference in the increase of carbonic acid in the air. Must not, therefore, every plant in a pot, every spray, any plant with leaves, make a perceptible difference in a room? Every lover of flowers may be pardoned for wishing to see this question answered in the affirmative. Have not even medical men proposed to adorn schoolrooms with plants in pots instead of ventilating them better, in order that their leaves and stems might absorb carbonic acid from the mouths of the children, and give out oxygen in its stead? But hygiene cannot agree even to this. Hygiene is a science of economics, and every such science has to ask not only what exists and whether it exists, but how much there is and whether enough. The power of twenty pots of plants would not be nearly sufficient to neutralize the carbonic acid exhaled by a single child in a given time. If children were dependent on the oxygen given off by flowers, they would soon be suffocated. It must not be forgotten what a slow process the production of matter by plants is,—matter which the animal organism absorbs and again decomposes in a very short time, whereby as much oxygen is used up as has been set free in the production of it. It is for this reason that such great extents of vegetation are required for the sustenance of animals and

man. The grass or hay consumed by a cow in a cowhouse grows upon a space of ground on which a thousand head of cattle could stand. How slow is the process of the growth of wheat before it can be eaten as bread, which a man will eat, digest, and decompose in twenty-four hours! The animal and human organism consumes and decomposes food as quickly as a stove burns the wood which took so many thousand times longer to grow in the forest.

It would scarcely be intelligible if I were to calculate how much carbonic acid and oxygen a rose, a geranium, or a bignonia would absorb and give out in a room in a day, and to what extent the air might be changed by it, taking into account the inevitable change of air always going on. I will draw attention to a concrete case which every one can understand.

When the Royal Winter Garden in Munich was completed and in use, it occurred to me to make experiments on the effect of the whole garden on the air within it. There could not be a more favorable opportunity for experimenting on the air in a space full of vegetation. This green and blooming space was not exposed to the free currents of air which at once immensely rarefy all gaseous exhalations, but was kept warm under a dome of glass, through which only the light of heaven penetrated. Although not hermetically sealed, the circulation of air in such a building, compared with that in the open air, is reduced over a hundred-thousand-fold.

I asked permission to make experiments for several days at various hours of the day and night, which was readily granted. Now, what was the result? The proportion of carbonic acid in the air in the winter garden was almost as high as in the open air. This greatly surprised me, but I hoped at any rate to have one of my traditional ideas confirmed: I hoped to find less carbonic acid in the day than in the night, supported by the fact that the green portions of plants under the influence of light decompose carbonic acid and develop oxygen. But even here I was disappointed. I generally found carbonic acid increasing from morning till evening, and decreasing from night till morning. As this seemed really paradoxical, I doubled my tests and care, but the result remained the same. At that time I knew nothing of the large amount of carbonic acid of the air, in the soil, the air of the ground, or I should probably have been less surprised.

One day it suddenly became clear to

me why there was always more carbonic acid by day than by night. I had been thinking only of the turf, the shrubs, and trees which consume carbonic acid and produce oxygen, and not of the men and birds in the winter garden. One day, when there were considerably more men at work there than usual, the carbonic acid rose to the highest point, and sank again to the average during the night. The production of carbonic acid by the working and breathing human beings was so much greater than that consumed by the plants in the same time.

The oxygen in the winter garden was rather higher than in the open air; there it was about twenty-one per cent., and in the winter garden twenty-two to twenty-three per cent.

I did not make any experiments on ozone, for reasons which I will give by-and-by.

The amount of carbonic acid in the air in the winter garden cannot be reckoned as telling for or against the hygienic value of vegetation in an enclosed space. Let us inquire, then, into the value of the slight increase of oxygen.

There is a widespread opinion that the breathing of air rich in oxygen effects a more rapid transformation of matter, a more rapid combustion, as we say, in the body. Even great inquirers and thinkers have considered that we only eat and imbibe nourishment to satiate the oxygen streaming through us, which would otherwise consume us. We know now well enough that the quantity of oxygen which we imbibe does not depend on the quantity in the air we breathe, but far more on previous changes in and the amount of transformation of matter in the body, which are regulated by the requirements of breathing. The inhalation of oxygen is not a primary but a secondary thing. When we inhale air at every breath richer than usual in oxygen — for example, when breathing highly compressed air, as divers do, or laborers on the pneumatic foundations of bridge piers — the result is not a larger consumption of matter and an increased production of carbonic acid, but merely a decrease in the number of inhalations. If in air of ordinary density we make about sixteen respirations in a minute, in air of greater density we should involuntarily make only twelve, ten, or eight, according to the density and our need of oxygen; all else remains the same.

Lavoisier, and half a century later Regnault and Reiset, placed animals for twenty-four hours in air very rich in oxygen,

but they did not consume more of it than in the ordinary air. An increase of oxygen in the air, therefore, or pure oxygen gas, only produces an effect in certain morbid conditions, in cases of difficulty of breathing, or where breathing has been for some time suspended, because an inspiration communicates more oxygen to the blood than breathing ordinary air. A healthy person can, however, without difficulty or injury, compensate for considerable differences, and an increase or decrease of one or two per cent. of oxygen does no harm, for under ordinary circumstances we only inhale one-fourth of the oxygen in the air we breathe; we inhale it with twenty-one per cent., and exhale it with sixteen per cent.

So far, therefore, as we feel ill or well in a winter garden, it does not depend on the quantity of oxygen in the air, and there is no greater appreciable quantity of oxygen in a wood of thick foliage than in a desert or on the open sea.

Let us, also, for a moment consider the ozone in the air, which may be looked upon as polarized or agitated oxygen. After its discovery, which has immortalized the name of Schönbein, was made known, it was thought for a time that the key had been found for the appearance and disappearance of various diseases, in the quantity of ozone in the air. But one fact, which was observed from the first, shows that it cannot be so; for the presence of ozone can never be detected in our dwellings, not even in the cleanest and best ventilated. Now, as it is a fact that we spend the greater part of our lives in our houses, and are better than if we lived in the open air, the hygienic value of ozone does not seem so very great. Added to this, the medical men of Königsberg long had several ozone stations there, during which time various diseases came and went, without, as appears from the reports of Dr. Schiefferdecker, ozone having the slightest connection with the appearance or disappearance of any of them.

Dr. Wolffhügel, assistant at the Hygienic Institute at Munich, has lately been occupied with the question of the sanitary value of ozone, but has arrived at only negative results.

But in saying this I have no intention of denying that ozone is of great importance in the atmosphere, for I am of opinion that it is. It is the constant purifier of the atmosphere from all organic matter, which passes into it and might accumulate. The air would have been long ago filled

with the vapors of decomposition if it were not for ozone, which oxidizes all that is oxidizable, if only time enough is allowed for it, and too much is not expected at once; for, generally, the amount of ozone in the air is so small, that it is consumed in making its way into our houses, without disinfecting them, and we can no more dispense with the greatest cleanliness and best ventilation in our homes than we can essentially change the air in our rooms by means of plants in pots and foliage.

Some of my readers will perhaps ask in some disappointment, in what, then, does the hygienic value of plants and plantations consist? Or do I mean to say that all the money spent by one and another on a parterre of flowers in his house or on a garden, or by a community for beautiful grounds, or by a State for the preservation of forests, with the idea of promoting health, is mere luxury, without any hygienic value? These questions alter our standpoint, and I believe I shall be able to show that even hygiene does recognize a sanitary value in plants and flowers, in the laying out of grounds and plantations, only it offers a different explanation from the ordinary one.

I consider the impression which plants and plantations make upon our minds and senses to be of hygienic value; further, their influence on the conformation of the soil, with which health is in many respects connected; and, finally, their influence upon other qualities of the air than carbonic acid, oxygen, and ozone: among these may be mentioned, in passing, shade in summer, and decrease of wind and dust.

It is an old observation, needing no demonstration, that the cheerful and happy man lives not only an easier, but, on the average, a more healthy life than the depressed and morose man. Medical men, and especially "mad doctors," could tell us much of the great value of a certain relative proportion of pleasurable and painful impressions upon health, and how frequently some unfortunate position, an absence of pleasure, or too much of painful impression, are the causes of serious illness. Man always tries, and has an irresistible need, to balance painful sensations by some kind of pleasure or other, so that often, in order to get himself into a tolerable frame of mind, or to deaden his feelings for a time, he will have recourse to wine, beer, or spirits, though he knows well enough that he will be worse afterwards than before. A certain amount of change and recreation is indispensable, and, failing others, we seek them by inju-

rious means. There are, doubtless, some unhappy and morbid natures who are always discontented, to whom everything comes amiss, and whom it is impossible to help; but the majority of men are easily pleased, find pleasure in little things, though it is but a sorry life they lead. It is something the same with the pleasures of life as with the pleasures of the table; we must relish our food if it is to do us good. What good will the most nourishing diet do me if it creates disgust? Professor C. Voit has clearly pointed out, in his experimental researches into diet, the great value of palatable food, as well as nourishment, and how indispensable a certain variety in our meals is. We think we are only tickling the palate, and that it is nothing to the stomach and intestines whether food is agreeable to the palate or not, since they will digest it, if it is digestible at all. But it is not so indifferent, after all; for the nerves of the tongue are connected with other nerves and with the nerve centres, so that the pleasures of the palate or some pleasure, at any rate, even if it is only imagination, which can only originate in the central organ, the brain, often has an active effect on other organs. This is a matter of daily experience. If you put your finger down your throat, you produce retching; many people have only to think of anything disgusting to produce the effect of an emetic, just as the thought of something nice makes the mouth water just as much as tasting the most dainty morsel. Voit showed me one of his dogs with a fistula in the stomach. So long as this dog is not thinking of food, his stomach secretes no gastric juice, but no sooner does he catch sight of a bit of meat, even at a distance, than the stomach prepares for digestion and secretes gastric juice in abundance. Without this secretion the assimilation of nourishment would be impossible. If therefore some provocatives induce and increase certain sensations and useful processes, they are of essential value to health, and it is no bad economy to spend something on them.

I consider flowers in a room, for all to whom they give pleasure, to be one of the enjoyments of life, like condiments in food. It is certainly one of the most harmless and refined. We cannot live on pleasure alone; but to those who have something to put up with in life, their beloved flowers perform good service.

The same may be said of private gardens and public grounds, and of the artistic perfecting of them. The more tastefully laid out, the better the effect. Though

tastes differ, there is a general standard of taste which lasts for several generations, though it varies from time to time and is subject to fashion. As their object is to give pleasure, public grounds should accord with the taste of the age, or aim at cultivating it. This is a justification for going to some expense for æsthetic ends.

The influence of vegetation on the soil is much more easy to determine than on the mind of man. Space fails me to go into all the aspects of this subject, and I will confine myself to some of the most obvious. The difference is most apparent on comparing the soil of a tract of land covered with wood with the soil outside, in other respects alike. The Bavarian Forest Department deserves great credit for having established meteorological stations with special reference to forest culture, under the superintendence of Professor Ebermayer of Aschaffenburg. He has published his first year's observations in a work on "The Influence of Forests on the Air and Soil, and their Climatic and Hygienic Importance,"* which may be recommended to every one who wishes to study the subject.

Modern hygiene has observed that certain variations in the moisture of the soil have a great influence on the origin and spread of certain epidemic diseases, as for instance cholera and typhoid fever—that these diseases do not become epidemic when the moisture in the soil is not above or below a certain level, and has remained so for a time. These variations can be measured with greater accuracy by the ground-water of the soil than by the rainfall, because in the latter case we have to determine how much water penetrates the ground, how much runs off the surface, and how much evaporates at once. The amount of moisture in the soil of a forest is subject to considerably less variation than that outside. Ebermayer has deduced the following result from his meteorological observations on forestry: "If from the soil of an open space one hundred parts of water evaporate, then from the soil of a forest free from underwood thirty-eight parts would evaporate, and from a soil covered with underwood only fifteen parts would evaporate." This simple fact explains clearly why the cutting down of wood over tracts of country is always followed by the drying up of wells and springs.

In India, the home of cholera, much

* Die physikalischen Wirkungen des Waldes auf Luft und Boden, und seine klimatologische und hygienische Bedeutung.

importance has been attached in recent times to plantations as preventives of it. It has been always observed that the villages in wooded districts suffer less than those in treeless plains. Many instances of this are given in the reports of Dr. Bryden, president of the statistical office in Calcutta, and Dr. Murray, inspector of hospitals. For instance, Bryden* compares the district of the Mahanadda, one of the northern tributaries of the Ganges, the almost treeless district of Rajpore, with the forest district of Sambalpoor. It is stated that in the villages in the plain of Rajpore, sixty or seventy per cent. of the inhabitants are sometimes swept away by cholera in three or four days, while the wooded district of Sambalpoor is often free from it, or it is much less severe. The district commissioner who had to make a tour in the district on account of the occurrence of cholera reports, among other things, as follows:—

The road to Sambalpoor runs for sixty or seventy miles through the forest, which round Putorah and Jenkluss is very dense. Now, it is a remarkable fact, but it is a fact nevertheless, that on this route, traversed daily by hundreds of travellers, vehicles, and baggage trains, the cholera rarely appears in this extent of sixty miles, and when it does appear it is in a mild form; but when we come to the road from Arang, westward to Chicholee Bungalow, which runs for about ninety miles through a barren, treeless plain, we find the cholera every year in its more severe form, the dead and dying lying by the wayside, and trains of vehicles half of whose conductors are dead.

In the same report Dr. Bryden continues:—

I will mention one other fact as a result of my observations, namely, that places surrounded by those vast and splendid groves which are occasionally seen, lying in low and probably marshy situations, surrounded by hills, and which, from the mass of decaying vegetation, are very subject to fever in September, October, and November, are seldom visited by cholera, and if it occurs there are but few deaths, while places on high ground, or in what are called fine, airy situations, free from trees and without hills near, so that they are thoroughly ventilated, suffer very much from cholera.

Murray gives a number of instances showing the influence of trees on the spread of cholera. One of these may find a place here:—

The fact is generally believed, and not long ago the medical officer of Jatisgar, in Central

* Epidemic Cholera in the Bengal Presidency, 1869, p. 225.

India, offered a striking proof of it. During the widespread epidemic of cholera in Allahabad, in 1859, those parts of the garrison whose barracks had the advantage of having trees near them enjoyed an indisputable exemption, and precisely in proportion to the thickness and nearness of the shelter. Thus the European Cavalry in the Wellington Barracks, which stand between four rows of mango-trees, but are yet to a certain extent open, suffered much less than the Fourth European Regiment whose quarters were on a hill exposed to the full force of the wind; while the Bengal Horse Artillery, who were in a thicket of mango-trees, had not a single case of sickness; and the exemption cannot be regarded as accidental, as the next year the comparative immunity was precisely the same.*

We need not, however, go to India to observe similar instances of the influence of a certain degree of moisture in the soil favored by woods or other conditions; we can find them much nearer home. In the cholera epidemic of 1854, in Bavaria, it was generally observed that the places in the moors were spared, in spite of the otherwise bad condition of the inhabitants. The great plain of the Danube from Neuburg to Ingolstadt was surrounded by places where it was epidemic, while in the plain itself there were but a few scattered cases. The same thing has been demonstrated by Reinhard, president of the Saxon Medical College. Cholera has visited Saxony eight times since 1836, and every time it spared the northerly district between Pleisse and Spree, where ague is endemic.

In the English Garden at Munich there are several buildings, not sparsely tenanted—the Diana Baths, the Chinese Tower, with a tavern and outbuildings, the Gendarmerie Station, and the Kleinkessellohe. In the three outbreaks of cholera at Munich none of these places have been affected by it. This fact is the more surprising, as three of them comprise public taverns into which the disease germs must have been occasionally introduced by the public; yet there was no epidemic in these houses, although it prevailed largely immediately beyond the English Garden and close to the Diana Baths in 1854 and 1873. It must have been accidental that no isolated cases occurred, as the inmates of the Chinese Tower, or the Kleinkessellohe, might have caught it in Munich as others did who came from a distance, but had there been single cases, probably no epidemic would have occurred in these houses.

* Report on the Treatment of Epidemic Cholera, 1869, p. 4.

Even if these deductions must be accepted with caution from an etiological point of view, still, on the whole, they indisputably tell in favor of trees and woods.

Surface vegetation has also other advantages, besides its use in regulating the moisture in the soil; it purifies it from the drainage of human habitations, whereby it is contaminated and impregnated. If this refuse matter remains in soil destitute of growing vegetation, further decomposition sets in, and other processes are induced, not always of a salubrious nature, but often deleterious, the products of which reach us by means of air or water, and may penetrate into our houses. But from this indisputable fact, false conclusions are sometimes drawn. Many people imagine that if a few old trees are left standing in an open space their roots will absorb all the impurities from the houses around, and render the refuse which accumulates beneath them innocuous. This idea is not only false in a sanitary point of view, but very injurious, as it prevents people from taking the measures which alone can keep the ground under our houses pure.

We will now explain why the shade of gardens and woods is at certain seasons so beneficial. The human race during its pilgrimage on earth and wanderings over it has many difficult tasks to perform. One of the most difficult is involved in the necessity that all our internal organs, and the blood, whether at the equator or the north pole, should retain an equable temperature of 37.5° Centigrade (98° Fahr.). Deviations of but one degree are signs of serious illness. The blood of the negro and that of the Esquimaux is of the same temperature, while the one lives in a temperature of 40° above and the other 40° below zero (Centigrade). A difference of 80° has therefore to be equalized.

Our organism, doubtless, possesses a special apparatus for the performance of this colossal task, self-acting sluices so to speak, by means of which more or less of the heat generated in the body passes off: these consist mainly in the increase or diminution of the peripheric circulation, and the action of the pores of the skin. But we soon come to the end of our natural regulating apparatus, and have to resort to artificial means. Against cold we have excellent methods in clothing, dwellings, and fires; but at present, our precautions against heat are very limited. This is doubtless the reason why higher civilization has extended so much farther towards the polar regions than towards the equa-

tor. The Germanic races, particularly, inevitably degenerate after living for a few generations in the tropics, and must be continually renewed by immigration if they desire to retain supremacy, as is proved by the case of the English in India. They will not be able to settle there and maintain the characteristics which have made them dominant, until means have been found of diminishing the heat of the body at pleasure, as we are able to maintain it in the north. At present our remedies against heat are baths, fans, and shade.

We lose the heat of our bodies in three different ways — by the medium in which we are,—generally the air,—and which can be warmed; by the evaporation of perspiration; and by radiation from bodies of a lower temperature, not taking into account a small portion of heat which goes off in mechanical labor. Under ordinary circumstances in temperate climates, we lose half the heat generated by radiation, one-fourth by evaporation, and one-fourth by the conducting medium in which we are. In proportion as any of these methods is diminished, one or both the others must be increased. As long as possible, our organisms are so obliging as to open and close the sluices themselves without our cognizance, provided that our regulating apparatus is in order, that we are not ill. It is only when our good servant the skin, under certain conditions, has come to an end of its powers, that we begin to feel that we must lend our aid. And thus we have found by experience that in hot weather shade helps the body to keep cool to the needful extent. The chief effect of shelter is to prevent the sun's rays from striking us directly; but if this were all, it would be as cool in the height of summer indoors, or even under the leaden roofs of Venice—which have driven many to frenzy and desperation—as under the shade of a tree or in a wood. It also makes a great difference whether the sun's rays fall on thick foliage or on a roof of slate or metal. A great deal of heat is neutralized by evaporation from the leaves; another portion by the decomposition of carbonic acid, just so much as is set free when we burn the wood and other organic combinations into the composition of which it enters. The heat produced by burning wood in a stove is derived from the sun; it is but the captured rays of the sun again set free by combustion. We learn from Ebermayer's work that the temperature of the trees in a forest and

even in the tops of them, is always lower than the air in the forest.

Besides this, shade in the open air always causes a certain draught which acts as a kind of fan. All must have noticed when walking in oppressive heat, when the air seems still as death, that a refreshing breeze arises as soon as a cloud casts a shade. The same thing may often be observed in summer in walking through a street with close rows of houses, when the air is still, and one side is sunny, the other in shade. On the sunny side there is not a breath of air, while on the other there may be a light breeze. This is easily explained; so far as the shade extends the air is cooler than in the sun; layers of air of unequal warmth are of different gravity, and this difference of temperature is the cause of the motion in the air.

The shade of a single tree, therefore, cools not only by intercepting the sun's rays, but also by the effect of gentle fanning. The shelter of a thick wood, however, is much more agreeable than that of a single tree. The air in a wood is cooler than that of an open space exposed to the sun. The air from outside is drawn into the wood, is cooled by it and cools us again. And it is not only the air that cools us, but the trees themselves. Observation has shown that the trunks of trees in a wood breast high, even at the hottest time of day, are 5° Cent. cooler than the air. We therefore lose considerable heat by radiation to these cooler objects, and can cool ourselves more easily at a temperature of 25° Cent. in a wood than at a much lower temperature in an open space. When the objects around us are as warm as ourselves we lose nothing by radiation; what is radiated from us is radiated back by them. This is why we are so uncomfortable in heated and overcrowded rooms. It is generally set down to bad air, and this does certainly contribute to it, but it is chiefly the result of disturbed distribution of heat, as has been plainly shown by experiments on the composition of such air, which makes many people feel ill.

MAX VON PETTENKOFER.

From The Spectator.

THE PRINCE CONSORT'S SAVINGS.

THE court has thought it wise — very justly thought it wise — to take advantage of the publication of the third volume of the "Life of the Prince Consort" to deny

one of the commonest, most widely diffused, and most generally believed of the charges against his memory. It is, perhaps, the only one which has obtained credence among the educated. They, however, as well as the masses, have been possessed by the notion that the prince, who was an admirable manager of affairs—he completely restored the finances of his son's property, the duchy of Cornwall—and who was personally not extravagant, left behind him a large fortune, which was invested in land in South Kensington, and was bequeathed at his death to the queen. His will, it was said, was proved before the archbishop instead of in the ordinary probate office, in order to conceal the truth, and the money was silently added by the queen to her already "vast" possessions. So inveterate was this story that, as Mr. Martin says, it imposed on statesmen of mark, and it exercised, not once, but repeatedly, a very decided political effect. It was one cause, at all events, of the extraordinary fuss made about the dower to the Princess Louise, and has helped repeatedly to embitter speeches against grants demanded on behalf of the South Kensington Museum and the department of Science and Art. The court, it was said, was always jobbing to bring up South Kensington rents. Mr. Martin declares, in the most explicit and definite way, that the story is an invention from beginning to end, that the prince consort spent his whole income, and that he left absolutely no fortune whatever. Mr. Martin's words, which are evidently intended to be unusually vehement, are as follows:—

It may be convenient here once for all to dispose of, perhaps, the only calumny of the many to which the prince was subjected, which, so far as we are aware, keeps any hold upon the public mind, viz., that he had amassed large sums of money out of the income allowed him by the nation, part of which had been invested in the purchase of land at South Kensington, adjoining the property of the exhibition commissioners. The prince never purchased any land at South Kensington, either for himself or his family. Connected as he was with the acquisition of ground there for purely national purposes, the thought of acquiring property in the same locality for personal purposes would never have entered his mind, or the mind, indeed, of any honorable man. But in truth, the prince never had the means to make purchases of this nature. His whole income was no more than sufficient to meet the salaries of his secretaries and other officials and servants, his public subscriptions, and such purchases of works of art as were

expected from him. He was often blamed because these purchases were not on a larger scale. The fault was not with him, but in the very limited means at his disposal, and as to these, his only regret was that they did not enable him to do for art and science all that he would have wished. It was only by strict economy that the year's current expenditure was made to square with the year's income, and the prince died, *leaving absolutely no fortune*; indeed, barely enough to meet his personal liabilities. And yet even recently we were assured, upon the authority of an eminent statesman, who survived the prince many years, and who professed to speak from personal knowledge, that he left behind in one of his investments no less a sum than £600,000! The statesman in question was not always exact in his statements, and he was never less exact, or more inexcusably so, than in this instance. But if a man whose position gave weight to his words could propagate so mere a fable, it becomes necessary to give it, and all stories of the same kind, an emphatic denial.

It is impossible for language to be more explicit, and this slander will now, we presume, disappear, like a thousand others. The odd thing about the original story of the savings is not that the public should have believed it—for the public will believe anything, when the figures get beyond £100,000—but that it should be considered a slander, and a slander so serious that a most reluctant court should, years after the victim's decease, feel it expedient to give it an explicit and as it were detailed denial. Why is it disgraceful to save one's cash? There always will be unkind stories circulating about the royal family. They seldom or never share in the popularity which the occupant of the throne, if only decently attentive to English peculiarities of feeling, can always secure, and they are all slightly injured as well as protected by that kind of twilight in which, ever since the days of the regency, the British court has succeeded in enveloping its proceedings. Something must be said about the central subject for gossip, and as there is nothing true to be said, the story which is most like ascertained truth is repeated in its place. The prince was known to be thrifty, and had stopped much foolish waste at Windsor arising from a ludicrous conflict of authorities, and consequently it was reported that he was making a great fortune. The queen has never asked her subjects for money and was known to be rich, and consequently she was declared to be most parsimonious and to be heaping up wealth so great that any application for dower or appanage for

her children was an injustice to the country. The truth about the latter point was explained by Mr. Gladstone, who said that the queen, a widow and fond of retirement, had saved a fortune, which was not at all unusual in amount, and for which she had many uses; and the truth about the former point is, that it is poor scandal, originally begotten of the vexation felt by employés of the palace when the excessive and wanton waste which in one or two departments had existed in previous reigns was brought under regulation. It will be found, in all human probability, when the queen's memoir is written by some successor to Mr. Martin, that she was exactly as liberal and as careful as most English châtelaines, and that the popular belief to the contrary has arisen solely from her love for quietness, which has disinclined her to play hostess, and to the overcrowding sometimes unavoidable at Balmoral and Osborne. So inveterate, however, is the determination that the queen shall not be faultless, that any story, however absurd, which can be explained on the theory of parsimony receives at once a certain credence. Two years ago, for example, half London "society" believed for some days that the empress of Austria, one of the very greatest ladies in Europe, and moreover, one of the most influential persons, had travelled to Windsor to see the queen, and had been suffered to depart without being offered lunch. The truth was that the empress was in a hurry, and although pressed to stay to a lunch already prepared, went away as she had arranged, but out of this simple incident grew rumor upon rumor. The case is the same, however, in all capitals, and the slanders, though annoying, do not much matter; but it is odd that in this country they should so persistently take this particular direction. Why should not the prince consort have saved his money, if he liked? Nobody in this country, once out of church, thinks saving improper; everybody professes to despise extravagance, and nobody outside a limited circle of tradesmen expects to get anything out of the court expenditure. Why, then, should not the prince have saved, and invested in South Kensington ground rents too, if he knew enough of business to do it? As a matter of fact, he never had the means. He can never have had £40,000 a year clear, and a prince in his position, with a household of his own to pay, arts to encourage, and dependants to protect, very soon finds that an income of that kind, large as it seems to the professional classes, requires to be

husbanded with some care. It is not the kitchen which drains the pocket of an English noble. Supposing the prince consort, however, to have had the means, wherein lay such an objection to his saving them that the mere statement that he had saved became a slander and added grievously to his unpopularity? We are absolutely unable to find a reason, except a certain unreasonableness in the temper of the English people. They did not think his allowance enormous. They did not want him to keep up any state separate from that of the queen. They would have been savage if he had spent money in any way which brought him popularity, or influence, or even social esteem. They wanted him to efface himself into the queen's private secretary, which alone among the prince consorts of history he did, and then they scolded because they thought that in his seclusion he had saved a fortune. It was mere unreasoning prejudice, fostered by annoyance at the very slight opening for comment which the prince gave anybody, and dislike of his imaginary tendencies in politics.

We wonder whether the etiquette which at present almost forbids the court either to refute or to punish slander is, in the interests of the monarchy, a wise one. We suspect it is. The statesmen of the Continent do not think so, and are always most jealous to preserve the power of restricting personal comment, but as a matter of fact, they usually fail, the most patent result of their efforts being to make the slanders much more bitter and unscrupulous. Napoleon was libelled everywhere at a time when a libeller was liable to Cayenne, and our own regent got nothing out of his prosecutions except a more accentuated hatred and contempt. The extraordinary sensitiveness of the German emperor, or it may be, of his ministers, does not shield him half so well as the quiescence of the queen, who in most cases of course never sees a libel, and it has not nearly the same effect of dignity. The right assumed by all royal personages on the Continent of refusing a challenge unless it comes from a royal prince, a right never surrendered—for the Duke de Montpensier's opponent was of his own blood—has never injured their reputation for courage, and a certain fortitude or indifference under obloquy does not deteriorate their character in the eyes of the multitude. It is very doubtful if Napoleon III.'s character, properly so called, was injured in Belgium or Switzerland by the literature of libel on him which grew

up in those countries, and quite certain that all the random stories about the Prince of Wales never stopped during his illness the popular prayer for his recovery. We suspect, indeed, that slander on royal persons, so long as they do not make themselves politically offensive to their people, goes very little way. It is not really credited. The people are tickled by it, just as they are by any other romances about the great, but they do not, while perhaps repeating the ill-natured story, believe it to be more than an expression of momentary dislike. If Marie Antoinette, who of all human beings was the one most foully libelled, had been on the popular side, neither the malice of her enemies nor her own indiscretion would have diminished her popularity one tittle, while her one grand prosecution did her more harm than all the inventions of the libellers. Extreme cases might, no doubt, occur, but as a rule, slanderous stories against royal personages are best refuted after they are dead, and in books like Mr. Martin's. Every Democrat in America used to read every day that General Grant was a drunkard, and a horse jockey, and a plunderer, and worse; but the Democrat who would not dine with General Grant, or who judged him differently on account of all these stories, might be sought in vain. He read in them expressions of an opinion that the general should not be re-elected, and that was all.

From Macmillan's Magazine.
HELIOGOLAND.

THERE are few places in Europe where the traveller may feel so secure from the companionship of the ordinary British tourist as in Heliogoland. And yet it is a British possession, and has been one ever since 1814. Up to that date the steep rock in the North Sea, whose name is sometimes spent Helgoland, or Heilgeland, but which we call Heliogoland, had remained in uncoveted and undesired possession of the Danes. Early in the beginning of the present century, however, when strange acts of appropriation were committed under the influence of panic, and justified by the rough-and-ready laws of self-defence, we seized upon this little group of islands lying in the German Ocean, right opposite the mouths of the great rivers Elbe and Weser. It consists of Heliogoland, Sandy Island, and several reefs and rocks, of which only two have

been given the distinctive names of the Monk and the Steen. Heliogoland itself is barely a mile long, and its average breadth is only the third of a mile. Even these moderate dimensions are said to be subjected to a steady reduction by the encroachments of the sea. There is every reason to believe that the whole group of islets, which bear distinct traces of change in their physical geography, once formed a single island—large compared to the size of any of its existing fragments.

A bit of old Frisian doggerel describes vividly enough the impression of the traveller who first sees Heliogoland in its summer dress:—

Road es det Lunn,
Grön es de Kaut,
Witt es de Sunn;
Deet es de woaper vant, Helligeland.

Red is the land,
Green is the grass,
White is the sand;
These are the colors of Heliogoland.

And very bright and pretty these colors looked to our eyes, when we dropped the "Sunbeam's" anchor in the harbor last August, after a swift and safe run across—under sail—from Margate in forty-eight hours. The ordinary route is by way of Hamburg, and from thence by steamers making an eight hours' voyage three times a week. Only a couple of these hours, however, are spent at sea, the other five being occupied by a slow progress down the Elbe. Heliogoland is a favorite resort of Austrian and German families, who flock here during the summer months to enjoy the delicious sea-bathing, and the inexpensive, pleasant, *sans-*façon** out-of-door life.

Indeed, the *coup d'œil* which first presented itself reminded me of nothing so much as one of the scenes from the opera of "The Flying Dutchman." There was the same bright sea, the dark cliffs, and the sandy shore. The same sort of long wooden pier straggled out into the blue water, and was crowded with groups of sturdy, fair, North Sea fishermen. They were idling about, too, in true theatrical fashion, dressed in loose trousers, light-blue striped sailor shirts, and blue or red woollen caps. Nor did the women look less picturesque in their bright scarlet or yellow bordered petticoats, light over-dresses, and black or chintz sun-bonnets.

Small as is the principal island, it yet boasts of two towns—one on the high land, and one on the low land. There is as much as one hundred and seventy

feet of difference between the two "lands," and the visitor must climb two hundred and three steps, if he would reach the upper town from the seashore. On this "Ober-land" stands the Government House, the church, the batteries and their magazine, and, higher than all, the splendid lighthouse, the lantern of which is two hundred and fifty-seven feet above the sea-level. This lighthouse not only serves as a warning from the rock on which it is built, but is of use to vessels entering the Elbe or the Weser, the Eyder or the Jade. There are about three hundred and fifty houses on this high ground, and eighty on the lower portion of the island, called the "Unter land," holding between them a couple of thousand inhabitants. These dwellings are so neat and clean, that their wooden walls and red roofs help to produce an indescribably comic effect of the whole place having been just taken out of a box of children's toys, and neatly arranged in squares and rows. But the combination of English comfort with Dutch cleanliness and German propriety is very agreeable to the eye.

The church is a curious building, and contains, suspended from the ceiling, several models of ships under full sail, presented, *ex voto*, from time to time. The women sit by themselves down-stairs, in pews marked with their family names; the men sit in a gallery up-stairs, round which has been painted, by no mean artist, a series of scenes from the Old and New Testaments. Some years ago the clergyman wished to paint these pictures out, which would have been a great pity; for, although the mode of treating the subjects has not been perhaps strictly ecclesiastical, they deserve to be retained as relics of a past age. It is to be hoped that some loving hand may even yet be found to copy or photograph these quaint old designs, ere time or progress deals still more hardly with them. The font, too, is especially curious. It is held up by figures so ancient that *cognoscenti* declare they must be the remaining supports of some ancient altar to a heathen deity. When a christening takes place there is a preliminary ceremony of filling this font, and it is pretty to see fifty or a hundred children advancing up the aisle in a procession, each bearing a little mug of water. The service is Lutheran. The clergyman reads from the communion-table, and above it is placed a little box from which he preaches. Besides this he possesses a pew of his own, exactly opposite that appropriated to the governor's use, with the

communion-table between. Both these pews are precisely like opera-boxes, and have windows to open and shut. It is not so long ago since prayers used to be offered up in this very church for wrecks; and it was an established custom, if the rumor of one arrived whilst service was being performed, for the clergyman to shut his book, seize the long hatchet-like pike placed in readiness for such an emergency, and lead his flock to their boats. But the mission was scarcely a Christian one, for no survivors were ever permitted to return and tell the tale of what sort of welcome they had received on these inhospitable rocks.

We must remember, however, in mitigation of such hard and cruel facts, that from father to son for many and many a bygone generation the trade and profession of each male inhabitant of Heliogoland had been that of a wrecker, with a very little exercise of the pilot's or fisherman's more gentle craft during the brief summer months. Indeed it has taken the strong repressive measures insisted on and strictly carried out by the present governor, to at all subdue this inborn tendency to act on the saying of what is one man's extremity being another man's opportunity. The great improvement in wrecking morals and manners which has been accomplished with so much difficulty is, however, but skin deep, and will even now collapse on the smallest chance of escaping detection. Whilst the "Sunbeam" lay in one of the two good harbors of these islands, she was the object of much curiosity and interest. Amongst her numerous visitors were some of the coast-guard. They had been duly shown round the yacht, and during this process some wag inquired of the coxswain of their gig what he would like to take first if the vessel were "sitting on the rocks." This is a euphemistic equivalent in Heliogoland for a vessel being cast away. A half-regretful gleam came into his bright blue eyes as the man answered wistfully, "I hardly know, sir; but there is a good deal of copper about." As a matter of fact, we had already observed that the ventilators and bright brasswork of our little ship attracted special notice and many expressions of half-envious admiration. But it is only fair to add that we had other more peaceful and less professional visitors from among the islanders and the *Bade-gäste*, and I often found beautiful bouquets of flowers and graceful messages of thanks awaiting me on board when we returned from a long day on shore.

The present governor of Heliogoland has indeed made enormous reforms in the system of legalized wreckage which he found in practice on the islands. He has established a volunteer corps of native coast-guards, superintended by eight picked coast-guardsmen from England. *Now*, therefore, when a wreck takes place on the shore, the errand of those battling with the beating surf, the howling wind, and the blinding storms of sleet and snow, to where the poor ship lies stranded on the rocks, is one of succor and not of heartless villany. Formerly the very same men would have only hastened to the spot with their pikes and hatchets, to cut down the bulkheads, force open the hatches, take out the cargo, and break up the ship as quickly as might be for the sake of appropriating her timbers, copper, and ballast. As for the unhappy crew, their fate would probably be similar to that of some passengers by coach to "Frisco" in its earliest days, of whom Artemus Ward makes mention as being the objects of the driver's special attention. This worthy used to make his rounds, kingbolt in hand, as soon as possible after an accident, and proceed to act on his avowed principle that "dead men don't sue; they ain't on it." But in these more civilized days, if rescue has come too late, gentle hands have laid the unfortunate mariners to rest in this bleak spot, and, through the kindness of the governor's wife, each grave in the pretty cemetery in Sandy Island, even though nameless, has been marked by a small black cross, bearing the name of the shipwrecked vessel and the date of its loss, whenever it was possible to ascertain them. The rocket apparatus has been used on many occasions, too, with the best results.

In spite, however, of the utmost vigilance, it sometimes happens that the old trade is still plied, and the governor told me the following story himself:—

He was one day lately caught in a thick fog when out in a boat shooting wild seabirds, and whilst waiting for the mist to lift, he heard a sound of hammering in the direction of a distant reef. His practised ears soon told him what it meant, and in spite of the difficulties raised on the spot by the crew of his boat, and the earnest efforts they made to dissuade him, he persisted in steering towards where he knew the reef lay. Just before reaching it, the fog lifted slightly, disclosing to some sentinel wrecker the swiftly coming boat. In a moment the most absurd stampede took place. Out of the cabin and hold of the unfortunate ship the disturbed pillagers

swarmed like bees, hoping to reach their own boats and escape unrecognized. So rapid were their movements, that only two or three of the least agile were captured, but those who succeeded in getting away left behind them their large axes and other ship-breaking implements, on most of which their names had been branded, and which thus furnished the means by which the owners were captured and punished. Since this adventure the wreckers have had to acknowledge that, like Othello, "their occupation's gone," and they have taken every opportunity of enlisting themselves on the side of law and order.

There has been great difficulty too in inducing the natives to use the life-boats brought from England. On more than one occasion the coast-guard men have found the air-boxes broken and the linings cut by the natives, whilst they have themselves been absent on a life-saving expedition. But these obstacles lessen every day, under the firm yet kindly rule of the present governor, who takes the liveliest personal interest in every detail of his administration.

The Waal Channel separates the Downs or Sandy Island from Heliogoland, and both islands are but thinly covered with soil, which is hardly anywhere more than four feet deep. Still there is pasture for cattle and sheep; and fair crops of barley and oats can be raised in summer. The principal revenue of the islands is derived from fish, which are sent to London *via* Hamburg, and from a large oyster-bed. For the last fifty years it has also been the favorite summer bathing-place of Austrians and Germans, who come over in great numbers between June and September. The life led by these visitors is a very simple and informal one. Nobody seems to think it necessary to walk up and down at certain hours, or to do any particular thing at regular and stated periods. You may even if you like dig sand-holes with the children, whilst you listen to lovely music played twice a day by a band from Carlsbad.

To enjoy Heliogoland you must be a good walker, for there are no horses on the island, and every place has to be visited on foot. There is a nice breezy walk across the highest point of the island to the north end, where a curious rock stands boldly out, almost separate from the mainland. The cliffs are full of caves and grottoes, which are illuminated twice a year. A reckless expenditure of blue lights and rockets takes place on these occasions, producing, I am assured, a very enchanting and magical effect. We were

so unfortunate in the weather during our short stay, that one of these illuminations which was impending, and formed the staple subject of conversation during many weeks, had to be postponed over and over again, and we never beheld it.

The system of bathing at Sandy Island is organized to perfection, and it was impossible to help contrasting it with the sea-side manners of Ramsgate, where we had last bathed. The *Bade-gäste* are taken across to Sandy Island in private boats or in omnibus boats, which run every five minutes, from 6 A.M. to 2 P.M. The bather provides himself with a ticket before starting, and has no more trouble. Ladies and gentlemen bathe on different sides of the island, and in different places, according to the wind and tide. We landed in our own boat, and I was much amused at the respectful distance at which the old pilot, who was carrying my bathing-gown, stopped. In his dread of approaching too closely to the forbidden precincts, he made the *Bade-frau* walk at least a quarter of a mile to meet us. It certainly was a treat to bathe in such pure and clear water beneath so lovely and bright a sky. One feels like a different being afterwards. Part of the programme consists in taking a *Sonne-bad*, and basking in the balmy air on the little sand-hills, sheltered by the rocks from too much wind or sun. The bather has no trouble or anxiety on his mind about machines or towels. They are all provided for him, and the price is included in his original ticket. After the bath it is *de rigueur* to go and breakfast at the restaurant pavilion on the beach, where you feel exactly as if you were sitting on the glazed-in deck of a ship. The food is excellent, and Heliogoland lobsters fresh out of the water are as different from the familiar lobster smothered in salad and sauce, as caviare, newly taken from the sturgeon and eaten on the banks of the Volga, is from caviare eaten on the banks of the Thames out of a china jar. Then after this excellent breakfast, if the *Bade-gast* is inclined for exercise, he may stroll about very pleasantly to the point of the reef, where he will hardly be able to turn his head without seeing the ribs of some unfortunate vessel sticking up out of the sea-sand; or he may return to the mainland and listen to the sweet music of the Carlsbad band, and even do a little mild shopping. The *specialities* of the island consist of hats, muffs, tippets, and many pretty things made from the plumage of the grey gull and other wild sea-birds which nest among the rocks. Besides

these there are various ingenious little articles manufactured by the inhabitants during the long, cold, dark winter evenings.

The "Ober-land," or upper part of the town, can boast of several good hotels and restaurants, and in summer some two or three hundred guests sit down daily at the principal *table d'hôte*. For evening amusement, there is a bright, cheery little theatre, where a really good company plays nightly the most sparkling and pretty pieces with a *verve* and finish which reminds one of a French play-house. An occasional ball at Government House is a great treat, and warmly appreciated by the fortunate guests.

There is a generally received fable to the effect that Heliogoland is overrun with rabbits, which are rapidly and surely undermining the whole of Sandy Island, and will eventually cause it to disappear beneath the sea. But, as a matter of fact, there is not a single rabbit on the island, nor has there been one in the memory of the present generation. The wild-fowl afford excellent sport. The guillemots breed in immense quantities among the picturesque rocks of the west coast, and in the autumn large numbers of woodcock land here on their way south in search of summer climes. In the town itself two large poles are erected at the corner of every street, and between them a net is suspended, by means of which many birds are caught during their flight. Mr. Gätke, the permanent secretary to the government, has a most interesting ornithological collection, consisting entirely of birds that have been shot on the islands, but embracing specimens of numerous foreign varieties. Many of those we saw must have found their way hither from Africa, from the Himalayas, and even from Australia, besides a peculiar kind of gull (Ross's gull) from the arctic regions, of which even the British Museum does not possess a specimen. Mr. Gätke talks of publishing a book on this collection of feathered wanderers whose flight has ended here.

During the winter the rocks swarm with wild-fowl of all kinds — swans, geese, and ducks, but only two of the species breed there, the razor-hawk and the guillemot. In the spring, when the rocks are literally covered with these birds, the effect must be inexpressibly droll, and the noise tremendous.

Insignificant as the place seems to most of us, Heliogoland has given a great deal of trouble in her day. Barely ten years ago she was the bugbear of insurance

offices and shipowners, and a well-known refuge for masters desirous of getting rid of their vessels in a comfortable manner. No vessel once on the neighboring reefs, or on the main island, was ever allowed to depart, while those wrecked in the Elbe or the neighboring rivers were simply plundered by the Heliogoland fishermen and pilots under the plea of salvage. The remuneration for discharging or pilfering a cargo used to be settled in full assembly of the *Vorstehererschaft*, whose members, being principally pilot officers and wreckers themselves, were naturally interested in the amount of the reward received for salvage.

No debts could be recovered in the island, no legal decrees enforced, and a creditor had to wait for the death of an obstinate debtor, on the chance of his property coming before the court. The credit of the island, until lately, was at a very low ebb indeed, and, in order to increase its funds, contracts for public gambling were entered into between the *Vorstehererschaft* and some German lessees, which had the desired effect for the moment. It is difficult to imagine that so small a place could, in the few years between 1815 and 1868, have involved itself in a public debt to the extent of 7,000*l*. At present, in spite of the abolition of the gaming-tables and a great outlay on public works, this sum has been reduced to somewhere about 3,000*l*. To the wise and prudent administration of the present governor, this, as well as every other improvement, is due. Under his beneficent rule, Heliogoland has changed so much that the visitor of even fifteen years ago would not recognize, in the orderly, neat, thriving little settlement, the ruinous, lawless, bankrupt island of those comparatively recent days.

ANNIE BRASSEY.

From The Spectator.

FORGETFULNESS.

IN the October number of *Mind*,—which keeps up its high standard of scholarly thoroughness in all its papers, though it might, we think, give at times rather more space than it does to subjects of general interest, without sacrificing anything in that direction,—there is a thoughtful paper on "Forgetfulness," by Mr. Verdon, in which the writer argues with a good deal of force against the now rather prevalent notion that there is no such thing as total forgetfulness, that

under adequate conditions every modification the mind has passed through may be restored, and recognized as the representative in memory of what had once before been presented in direct experience. Sometimes people will tell you that in the process of losing consciousness by drowning, they have, in a moment or two, passed through, in vision, the whole of the experience of their previous lives, including incidents which, so far as they knew, they had completely and absolutely forgotten. Now, of course, statements of this kind are necessarily very vague, and hardly capable of verification. Those who give such evidence, if cross-examined, would not probably maintain that they really passed through in vision the long line of all the purely mechanical actions of their lives, all the times they had yawned, or coughed, or sneezed, or hummed a tune, every crossing of a *t* and dotting of an *i* in every line written by them from childhood to the date of the drowning,—that all the notes that they had once seen in a sunbeam had been seen again in the same order as before; they can hardly mean all this. What they do probably mean is simply that all the more stirring incidents of their life which had become deeply engraved on their memory before by their association with some grave action or strong passion, some deep emotion, or some serious pang of remorse, recur at such a time in due order. If they mean more than this, there is this great difficulty about the statement,—that we are all of us absolutely incompetent to say of the greater part of our least interesting experiences, whether they are faithfully represented in memory or not. Let any man walk down two or three yards of a busy street. Of course a vast number of impressions are made on his retina and on his ears; probably a good many associated ideas pass rapidly through his mind; one or two odors will be perceived; he will feel the pavement with his feet and his stick in two or three different places; and he will have some sort of notion of the warmth or coldness of the air through which he passes or, at least, of the changes of temperature. Now, within (say) three minutes, let him repeat the very same walk, and take all the pains in the world to note the similarities and differences in what he experiences. We are very certain that even though the person in question were a Charles Dickens himself, he will simply not be able to assure himself whether or not he saw before many things that he sees now, and heard before many things

that he hears now. He will not know whether or not he treads on precisely the same spots on the pavement as before, and places his stick on the same; he will not know whether the currents of air meet him in precisely the same places; and he will not know whether or not the same associations pass through his mind in precisely the same order. Now, if this be so when a man repeats, as nearly as the changes of the external world admit, the same experiences within three minutes, for the very purpose of recognizing all that is recognizable, and discriminating what is different,—it stands to reason that in a review of life, however vivid it may be, occurring many years after most of the events reviewed, it would be simply impossible to say whether all the images which pass in vision before you are or are not real memorial pictures of your former experience. If your original perceptions are so vague,—as in ninety-nine cases out of every hundred of half-attentive perception they are,—that within the next five minutes you are unable to say whether they are repeated accurately or not, how is it conceivable that under any spell whatever you can be quite sure that they have been repeated accurately at the interval of many years? We can only remember distinctly what we have vividly experienced. If the first experience is blurred and faint, the best conceivable return of it to memory must be blurred and faint also; nor can we usually, in the case of a blurred and faint first-hand experience, recall, even immediately, the degree in which each part of the image was thus blurred and faint. We confess, therefore, that we agree with Mr. Verdon in entertaining the profoundest doubt of the truth of the now rather common assumption that memory may one day restore to our recognition *every* experience of our past life. We should say that a very large part of life is consumed in experiences so little unique and so very like thousands of other experiences, that even if they did recur to our mind's eye in precisely the same form as before, we should be unable to affirm with confidence that they were the same. If the twenty thousand dinners that a middle-aged man had eaten were all to be paraded with the most faithful accuracy before his imagination, how is he, who probably hesitates in the witness-box whether or not the claimant before him be his own old friend or an impostor who closely resembles him, to swear to their identity? There are no doubt such things as infallible attestations of memory. If five minutes ago I were med-

itating a great crime or a great deed of any sort, I know that this was so, as well as I know where I am now. But as to ninety-nine hundredths of the minutiae of human existence, memory, even when fresh, refuses to attest anything with absolute certainty. And it is at least exceedingly difficult, even if not quite impossible, to suppose that what memory could not attest at all when the event on which it was questioned was quite fresh, it could infallibly attest when that event was the vanishing point of a long past.

We hold, then, with Mr. Verdon that there is no real ground for supposing that *all* past states of consciousness must be recoverable and identifiable by us as the veritable states through which we actually passed. As a general rule, it is only moments of somewhat vividly concentrated life that we can positively attest in memory at any great distance of time; while common and commonplace experiences can hardly be discriminated clearly from each other even at the shortest intervals. We believe that in every man's life there are not only many experiences which have not been distinct enough when they occurred to be clearly and faithfully remembered, but also many which are so often partially repeated without critical and momentous differences, that even the most complete restoration of some of them in consciousness could not be identified individually, but only as types.

But nothing that we have said must be interpreted as throwing any doubt on the well-established fact that what has once been thoroughly well known, though since apparently quite forgotten, in consequence of the displacing power of new associations and new habits, may be brought back into full recollection again by any circumstances,—such, for instance, as those of a fever,—which in their turn obliterate the more immediate present, and set the mind working again in the old grooves. Nobody can doubt the truth of some of the stories of people who in illness have repeated sentences from a language quite unknown to them in their ordinary state, but which, as is subsequently ascertained, were impressed on their ear in childhood or youth, by hearing them constantly repeated, till at last these sentences had become as familiar to them as the inarticulate cries of London are to one who has long lived in the London streets, cries which, in like manner, disappear from the memory, so soon as the ear ceases to be familiar with them. And these stories certainly prove that anything which has

once been thoroughly familiar may be revived again in the memory, by striking the proper key-note in the music of old association,—at least if it be struck at a time when the mind is shut out from the disturbing influence of immediate practical interests, and temporarily imprisoned in the past. All this is in no way inconsistent with what we have been maintaining,—namely, that it is impossible to distinguish clearly in memory what you have never distinguished clearly even in direct knowledge, that you cannot surely recognize what you have never surely known. You may certainly have the most vivid recognition of things very long indeed forgotten, and as you would suppose, absolutely forgotten, supposing always that they were once thoroughly familiar, as almost every one must have experienced at times even in dreams. But then what is it that has apparently obliterated these familiar things from memory? It is the claim on the attention of a long succession of other duties and interests, and if these for a time be excluded, even though only by the images of a dream which diverts the mind into long-deserted tracks, there is no reason at all why the old attitude of mind should not be resumed, and when resumed, should not appear as fresh and natural as ever. Moreover, nothing is more likely to be suddenly revived in this way than a long-disused mechanical habit, with some old link in the chain of which the eye or ear suddenly finds itself again in contact. All experience shows that as nothing is so easy as to forget mere words and names, even when the things they represent are quite clearly before the mind, so the only way to recollect them is not so much to dwell on them, as to get into some well-worn groove of habit, by the help of which you come upon them unawares, in the midst of equally familiar words. Thus it has been noted that even people who suffer from that very serious disease of the brain called aphasia, almost always *swear* correctly, indeed say anything correctly which they are not *trying* to say, but which just completes a chain of old associations.

Aphasic patients can scold the servants—an operation in which they are started, as it were, by a habit, rather than by a set purpose—when they cannot even get nearer to the word “moon” than to call it “that public light,” or to the word “card” than “cigar.” Carried back into an old groove of habit, they will run straight, though if they were to pick their own way, they would go blundering from side to side. Thus the man who forgot his most intimate friend’s name, when he wanted to introduce him, recovered it at once in the mere swing of the familiar imprecation with which he said, “Confound you, Robinson, what *is* your name?” But the ease of the process of recovering such a dropped stitch in the memory, if you can only go back a few stitches and come upon it with the momentum of an old habit, is no argument at all in favor of the proposition that complete forgetfulness is impossible. For the truth is, that a very great proportion of our lives is made up, not of habitual actions which come quite pat, but of half-perceived, half-discriminated, half-grasped circumstances, which we could not clearly recall the next instant, for the very excellent reason that they were not clearly presented to us when they were presented. Anything which the mind has once really made its own, it may recur to, even long after it had seemed to be obliterated; but what has never been its own when it was first in contact with our thought, cannot become so in memory. You may disinter a long-buried train of associations, as you may disinter an old Roman road long hidden by the superincumbent dust of ages. But then the train of associations must have been there, and must have been firmly welded together once, before it can be possible to disinter it. Great portions of our lives are unrememberable simply because they have never been vividly lived, and indeed, in all the minutæ of their detail, hardly could have been vividly lived at all. If you don’t know what you see at the time you see it, it is no great fault of the memory if you cannot remember it when you see it no longer.

DETERMINATION OF THE HEIGHTS OF CLOUDS.—Mr. Alexander Ringwood, of Adelaide, has sent home a short paper on this subject, which appears to have been privately printed. He proposes to carry out the observations with a small simple altazimuth instrument. The principle is intelligible enough. The sun’s altitude being known, and the edges of the projections of cloud shadows being

parallel to the sun’s rays: if we have a map of the country round the station, and mark on it the spots where the sun’s rays strike through clouds, or where the shadows of clouds fall, the determination of the height of the cloud stratum is effected by plane trigonometry, if we observe the altitude of the precise points in the cloud.